

# **BlitzBasic 2 Library Commands V1.2**

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| COLLABORATORS |   |                  |           |
|---------------|---|------------------|-----------|
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# Contents

|          |   |          |
|----------|---|----------|
| <b>1</b> | <b>BlitzBasic 2 Library Commands V1.2</b> | <b>1</b> |
| 1.1      | BlitzBasic 2 Library Commands . . . . .   | 1        |
| 1.2      | libraryindex . . . . .                    | 1        |
| 1.3      | trackmain . . . . .                       | 2        |
| 1.4      | track_opendisk . . . . .                  | 2        |
| 1.5      | track_motoron . . . . .                   | 2        |
| 1.6      | track_motoroff . . . . .                  | 3        |
| 1.7      | track_rs . . . . .                        | 3        |
| 1.8      | track_ws . . . . .                        | 3        |
| 1.9      | track_ft . . . . .                        | 3        |
| 1.10     | track_closedisk . . . . .                 | 4        |
| 1.11     | track_wb . . . . .                        | 4        |
| 1.12     | rianimmain . . . . .                      | 4        |
| 1.13     | rianimindex . . . . .                     | 4        |
| 1.14     | rianim_init . . . . .                     | 5        |
| 1.15     | rianim_nextf . . . . .                    | 5        |
| 1.16     | rianim_loop . . . . .                     | 6        |
| 1.17     | commoditiesmain . . . . .                 | 6        |
| 1.18     | commoditiesindex . . . . .                | 6        |
| 1.19     | comm_make . . . . .                       | 7        |
| 1.20     | comm_setkey . . . . .                     | 7        |
| 1.21     | comm_hit . . . . .                        | 7        |
| 1.22     | comm_event . . . . .                      | 8        |
| 1.23     | comm_setstatus . . . . .                  | 8        |
| 1.24     | comm_exmessage . . . . .                  | 8        |
| 1.25     | comm_cx . . . . .                         | 8        |
| 1.26     | comm_ex . . . . .                         | 9        |
| 1.27     | wbmain . . . . .                          | 9        |
| 1.28     | wbindex . . . . .                         | 10       |
| 1.29     | wb_appevent . . . . .                     | 10       |

---

|      |                                |    |
|------|--------------------------------|----|
| 1.30 | wb_appwindowevent . . . . .    | 10 |
| 1.31 | wb_appiconevent . . . . .      | 11 |
| 1.32 | wb_appmenuevent . . . . .      | 11 |
| 1.33 | wb_addappwindow . . . . .      | 11 |
| 1.34 | wb_addappicon . . . . .        | 11 |
| 1.35 | wb_addappmenu . . . . .        | 12 |
| 1.36 | wb_appwindowfile . . . . .     | 12 |
| 1.37 | wb_appiconfile . . . . .       | 12 |
| 1.38 | wb_appmenufile . . . . .       | 12 |
| 1.39 | wb_appiconhit . . . . .        | 13 |
| 1.40 | wb_appmenuhit . . . . .        | 13 |
| 1.41 | wb_delapp . . . . .            | 13 |
| 1.42 | toolmain . . . . .             | 14 |
| 1.43 | toolindex . . . . .            | 14 |
| 1.44 | tool_seticonhit . . . . .      | 15 |
| 1.45 | tool_shapetoicon . . . . .     | 15 |
| 1.46 | tool_seticontype . . . . .     | 15 |
| 1.47 | tool_iconrender . . . . .      | 16 |
| 1.48 | tool_icondefaulttool . . . . . | 16 |
| 1.49 | tool_findtooltype . . . . .    | 17 |
| 1.50 | tool_giobject . . . . .        | 17 |
| 1.51 | tool_piobject . . . . .        | 17 |
| 1.52 | tool_fiobject . . . . .        | 18 |
| 1.53 | tool_ftvalue . . . . .         | 18 |
| 1.54 | tool_ftnumber . . . . .        | 18 |
| 1.55 | tool_mtvalue . . . . .         | 18 |
| 1.56 | tool_stvalue . . . . .         | 19 |
| 1.57 | tool_nttype . . . . .          | 19 |
| 1.58 | tool_cttypes . . . . .         | 20 |
| 1.59 | reqmain . . . . .              | 20 |
| 1.60 | reqindex . . . . .             | 20 |
| 1.61 | req_output . . . . .           | 21 |
| 1.62 | req_filerequest . . . . .      | 21 |
| 1.63 | req_fileloc . . . . .          | 21 |
| 1.64 | req_flags . . . . .            | 21 |
| 1.65 | pcfmain . . . . .              | 24 |
| 1.66 | pcfindex . . . . .             | 25 |
| 1.67 | pcf_cachepcf . . . . .         | 25 |
| 1.68 | pcf_freepcfcache . . . . .     | 26 |

---

|       |                              |    |
|-------|------------------------------|----|
| 1.69  | pcf_unpackpcf . . . . .      | 26 |
| 1.70  | pcf_loadpcf . . . . .        | 26 |
| 1.71  | pcf_pcfinfo . . . . .        | 26 |
| 1.72  | pcf_pcfversion . . . . .     | 27 |
| 1.73  | pcf_pcfwidth . . . . .       | 27 |
| 1.74  | pcf_pcfheight . . . . .      | 27 |
| 1.75  | pcf_pcfdepth . . . . .       | 27 |
| 1.76  | pcf_other . . . . .          | 27 |
| 1.77  | packmain . . . . .           | 28 |
| 1.78  | packindex . . . . .          | 29 |
| 1.79  | pack_unpackiff . . . . .     | 29 |
| 1.80  | pack_ilbmpalette . . . . .   | 30 |
| 1.81  | pack_ilbmgrab . . . . .      | 30 |
| 1.82  | pack_loadiff . . . . .       | 31 |
| 1.83  | pack_deice . . . . .         | 31 |
| 1.84  | pack_chunkheader . . . . .   | 32 |
| 1.85  | gfxmain . . . . .            | 32 |
| 1.86  | gfxindex . . . . .           | 33 |
| 1.87  | gfx_paletteinfo . . . . .    | 33 |
| 1.88  | @{fg . . . . .               | 33 |
| 1.89  | gfx_palgreen . . . . .       | 33 |
| 1.90  | gfx_palblue . . . . .        | 34 |
| 1.91  | gfx_agapalred . . . . .      | 34 |
| 1.92  | gfx_agapalgreen . . . . .    | 34 |
| 1.93  | gfx_agapalblue . . . . .     | 35 |
| 1.94  | gfx_paladjust . . . . .      | 35 |
| 1.95  | gfx_fillpalette . . . . .    | 35 |
| 1.96  | gfx_agafillpalette . . . . . | 36 |
| 1.97  | fnsmain . . . . .            | 36 |
| 1.98  | fnsindex . . . . .           | 36 |
| 1.99  | fns_format . . . . .         | 37 |
| 1.100 | fns_settab . . . . .         | 37 |
| 1.101 | fns_load . . . . .           | 37 |
| 1.102 | fns_unload . . . . .         | 38 |
| 1.103 | fns_slot . . . . .           | 38 |
| 1.104 | fns_installfns . . . . .     | 38 |
| 1.105 | fns_removefns . . . . .      | 39 |
| 1.106 | fns_print . . . . .          | 39 |
| 1.107 | fns_output . . . . .         | 40 |

|                                  |    |
|----------------------------------|----|
| 1.108fns_ink . . . . .           | 40 |
| 1.109fns_prefs . . . . .         | 40 |
| 1.110fns_height . . . . .        | 41 |
| 1.111fns_underline . . . . .     | 41 |
| 1.112fns_width . . . . .         | 41 |
| 1.113fns_clip . . . . .          | 42 |
| 1.114fns_clipoutput . . . . .    | 42 |
| 1.115fns_origin . . . . .        | 42 |
| 1.116fns_lenght . . . . .        | 43 |
| 1.117fns_version . . . . .       | 43 |
| 1.118funcmain . . . . .          | 43 |
| 1.119funcindex . . . . .         | 44 |
| 1.120func_resettimer . . . . .   | 44 |
| 1.121func_cludgeshapes . . . . . | 45 |
| 1.122func_cludgesound . . . . .  | 45 |
| 1.123func_reserve . . . . .      | 45 |
| 1.124func_erase . . . . .        | 45 |
| 1.125func_eraseall . . . . .     | 45 |
| 1.126func_bload . . . . .        | 46 |
| 1.127func_pload . . . . .        | 46 |
| 1.128func_bsave . . . . .        | 46 |
| 1.129func_start . . . . .        | 47 |
| 1.130func_length . . . . .       | 47 |
| 1.131func_memfree . . . . .      | 47 |
| 1.132func_nextbank . . . . .     | 47 |
| 1.133func_fillmem . . . . .      | 47 |
| 1.134func_copybyte . . . . .     | 48 |
| 1.135func_copyword . . . . .     | 48 |
| 1.136func_copylong . . . . .     | 48 |
| 1.137func_makedir . . . . .      | 48 |
| 1.138func_rename . . . . .       | 48 |
| 1.139func_timer . . . . .        | 49 |
| 1.140func_lisa . . . . .         | 49 |
| 1.141func_reboot . . . . .       | 49 |
| 1.142func_filesize . . . . .     | 49 |
| 1.143func_cacheoff . . . . .     | 49 |
| 1.144func_xor . . . . .          | 50 |
| 1.145func_max . . . . .          | 50 |
| 1.146func_keycode . . . . .      | 50 |

---

|                                |    |
|--------------------------------|----|
| 1.147fxmain . . . . .          | 50 |
| 1.148fxindex . . . . .         | 51 |
| 1.149fx_planar . . . . .       | 51 |
| 1.150fx_fadeinbm . . . . .     | 51 |
| 1.151fx_clearbm . . . . .      | 52 |
| 1.152fx_zoom2 . . . . .        | 52 |
| 1.153fx_zoom4 . . . . .        | 53 |
| 1.154fx_zoom8 . . . . .        | 53 |
| 1.155fx_addvalue . . . . .     | 53 |
| 1.156fx_initzoomxy . . . . .   | 53 |
| 1.157fx_zoomxy . . . . .       | 54 |
| 1.158fx_derez . . . . .        | 54 |
| 1.159fx_reducex2 . . . . .     | 55 |
| 1.160zj_main . . . . .         | 55 |
| 1.161zonejoymain . . . . .     | 55 |
| 1.162zj_ztsize . . . . .       | 55 |
| 1.163zj_uztable . . . . .      | 56 |
| 1.164zj_nztable . . . . .      | 56 |
| 1.165zj_fztable . . . . .      | 56 |
| 1.166zj_ztable . . . . .       | 57 |
| 1.167zj_zoneinit . . . . .     | 57 |
| 1.168zj_setzone . . . . .      | 58 |
| 1.169zj_zone . . . . .         | 58 |
| 1.170zj_zonetest . . . . .     | 58 |
| 1.171zj_zonetable . . . . .    | 59 |
| 1.172zj_jfire . . . . .        | 59 |
| 1.173zj_jhoriz . . . . .       | 59 |
| 1.174zj_jvert . . . . .        | 60 |
| 1.175zj_allfire . . . . .      | 60 |
| 1.176ciatrackermain . . . . .  | 60 |
| 1.177cia_author . . . . .      | 61 |
| 1.178cia_quickusage . . . . .  | 62 |
| 1.179cia_ltm module . . . . .  | 62 |
| 1.180cia_stracker . . . . .    | 63 |
| 1.181cia_stoptracker . . . . . | 63 |
| 1.182cia_sdwait . . . . .      | 63 |
| 1.183cia_ftmodule . . . . .    | 64 |
| 1.184cia_stmodule . . . . .    | 64 |
| 1.185cia_gtsize . . . . .      | 64 |

---

|                                      |    |
|--------------------------------------|----|
| 1.186cia_gtevent . . . . .           | 64 |
| 1.187cia_ctevent . . . . .           | 65 |
| 1.188cia_wtevent . . . . .           | 65 |
| 1.189cia_ctmid . . . . .             | 65 |
| 1.190cia_gtvolume . . . . .          | 66 |
| 1.191cia_gtnote . . . . .            | 66 |
| 1.192cia_sttempo . . . . .           | 66 |
| 1.193cia_gtinstrument . . . . .      | 66 |
| 1.194cia_gpposition . . . . .        | 67 |
| 1.195cia_gsongposition . . . . .     | 67 |
| 1.196cia_sspposition . . . . .       | 67 |
| 1.197cia_gsonglength . . . . .       | 67 |
| 1.198cia_stmask . . . . .            | 67 |
| 1.199cia_ogtnnumber . . . . .        | 68 |
| 1.200cia_stppos . . . . .            | 68 |
| 1.201cia_prtracker . . . . .         | 68 |
| 1.202cia_ptsample . . . . .          | 68 |
| 1.203cia_itracker . . . . .          | 69 |
| 1.204cia_gslocation . . . . .        | 69 |
| 1.205cia_gslength . . . . .          | 69 |
| 1.206cia_gsname . . . . .            | 69 |
| 1.207cia_gtname . . . . .            | 69 |
| 1.208cia_bntable . . . . .           | 70 |
| 1.209cia_gtnnumber . . . . .         | 70 |
| 1.210elmoremain . . . . .            | 70 |
| 1.211elmore_hardwareindex . . . . .  | 70 |
| 1.212elmore_mathindex . . . . .      | 71 |
| 1.213elmore_intuitionindex . . . . . | 71 |
| 1.214elmore_stringindex . . . . .    | 71 |
| 1.215elmore_libraryindex . . . . .   | 72 |
| 1.216elm_quiet . . . . .             | 72 |
| 1.217elm_freq . . . . .              | 72 |
| 1.218elm_ticks . . . . .             | 73 |
| 1.219elm_resettimer . . . . .        | 73 |
| 1.220elm_joyc . . . . .              | 73 |
| 1.221elm_vwaitpos . . . . .          | 73 |
| 1.222elm_checkaga . . . . .          | 74 |
| 1.223elm_peekto . . . . .            | 74 |
| 1.224elm_forcepal . . . . .          | 74 |

---



|                                  |    |
|----------------------------------|----|
| 1.225elm_forcentsc . . . . .     | 74 |
| 1.226elm_depth . . . . .         | 74 |
| 1.227elm_clickmouse . . . . .    | 75 |
| 1.228elm_chipfree . . . . .      | 75 |
| 1.229elm_fastfree . . . . .      | 75 |
| 1.230elm_largestfree . . . . .   | 75 |
| 1.231elm_xor . . . . .           | 76 |
| 1.232elm_largestl . . . . .      | 76 |
| 1.233elm_smallestl . . . . .     | 76 |
| 1.234elm_largestq . . . . .      | 76 |
| 1.235elm_smallestq . . . . .     | 77 |
| 1.236elm_largest . . . . .       | 77 |
| 1.237elm_smallest . . . . .      | 77 |
| 1.238elm_avgl . . . . .          | 77 |
| 1.239elm_avgq . . . . .          | 77 |
| 1.240elm_avg . . . . .           | 78 |
| 1.241elm_rrandomize . . . . .    | 78 |
| 1.242elm_rrnd . . . . .          | 78 |
| 1.243elmore_arrayindex . . . . . | 78 |
| 1.244elm_request . . . . .       | 79 |
| 1.245elm_activescreen . . . . .  | 79 |
| 1.246elm_screenwidth . . . . .   | 79 |
| 1.247elm_screenheight . . . . .  | 80 |
| 1.248elm_activewindow . . . . .  | 80 |
| 1.249elm_waitfor . . . . .       | 80 |
| 1.250elm_showreq . . . . .       | 80 |
| 1.251elm_checksum . . . . .      | 81 |
| 1.252elm_charcount . . . . .     | 81 |
| 1.253elm_searchbegin . . . . .   | 81 |
| 1.254elm_searchend . . . . .     | 82 |
| 1.255elm_cipher\$ . . . . .      | 82 |
| 1.256elm_null . . . . .          | 82 |
| 1.257elm_repeats . . . . .       | 82 |
| 1.258elm_space\$ . . . . .       | 83 |
| 1.259elm_bin# . . . . .          | 83 |
| 1.260elm_hex# . . . . .          | 83 |
| 1.261elm_intuibase . . . . .     | 83 |
| 1.262elm_dosbase . . . . .       | 84 |
| 1.263elm_graphicsbase . . . . .  | 84 |

---

|                                   |    |
|-----------------------------------|----|
| 1.264elm_ffpbase . . . . .        | 84 |
| 1.265elm_diskfontbase . . . . .   | 84 |
| 1.266elm_commo . . . . .          | 84 |
| 1.267elm_iconbase . . . . .       | 85 |
| 1.268elm_rexxbase . . . . .       | 85 |
| 1.269info . . . . .               | 85 |
| 1.270bummain . . . . .            | 85 |
| 1.271bum_misc . . . . .           | 86 |
| 1.272bum_sortlist . . . . .       | 86 |
| 1.273bum_loadfont . . . . .       | 87 |
| 1.274bum_spritemode . . . . .     | 87 |
| 1.275bum_exists . . . . .         | 87 |
| 1.276bum_runerrson . . . . .      | 87 |
| 1.277bum_block . . . . .          | 88 |
| 1.278unnamed.1 . . . . .          | 88 |
| 1.279bum_vpos . . . . .           | 88 |
| 1.280bum_animlib . . . . .        | 88 |
| 1.281bum_loadanim . . . . .       | 89 |
| 1.282bum_initanim . . . . .       | 90 |
| 1.283bum_nextframe . . . . .      | 90 |
| 1.284bum_frames . . . . .         | 90 |
| 1.285bum_showbitmap . . . . .     | 91 |
| 1.286bum_blitcoll . . . . .       | 91 |
| 1.287bum_ilbmviewmode . . . . .   | 91 |
| 1.288bum_loadshape . . . . .      | 92 |
| 1.289bum_remap . . . . .          | 92 |
| 1.290bum_shapegadget . . . . .    | 93 |
| 1.291bum_setbplcon0 . . . . .     | 93 |
| 1.292bum_speakcommands . . . . .  | 94 |
| 1.293bum_speak . . . . .          | 94 |
| 1.294bum_setvoice . . . . .       | 95 |
| 1.295bum_translate\$ . . . . .    | 95 |
| 1.296bum_phoneticspeak . . . . .  | 96 |
| 1.297bum_voiceloc . . . . .       | 96 |
| 1.298bum_medlib . . . . .         | 97 |
| 1.299bum_loadmedmodule . . . . .  | 97 |
| 1.300bum_startmedmodule . . . . . | 98 |
| 1.301bum_playmed . . . . .        | 98 |
| 1.302bum_stopmed . . . . .        | 98 |

---

|                                      |     |
|--------------------------------------|-----|
| 1.303bum_jumpmed . . . . .           | 98  |
| 1.304bum_setmedvolume . . . . .      | 99  |
| 1.305bum_getmedvolume . . . . .      | 99  |
| 1.306bum_getmednote . . . . .        | 99  |
| 1.307bum_getmedinstr . . . . .       | 99  |
| 1.308bum_setmedmask . . . . .        | 100 |
| 1.309bum_serialport . . . . .        | 100 |
| 1.310bum_openserial . . . . .        | 100 |
| 1.311bum_writeserial . . . . .       | 101 |
| 1.312bum_writeserialstring . . . . . | 101 |
| 1.313bum_readserial . . . . .        | 101 |
| 1.314bum_readserialstring . . . . .  | 102 |
| 1.315bum_closeserial . . . . .       | 102 |
| 1.316bum_setserialbuffer . . . . .   | 102 |
| 1.317bum_setseriallens . . . . .     | 102 |
| 1.318bum_setserialparams . . . . .   | 103 |
| 1.319bum_serialevent . . . . .       | 103 |
| 1.320bum_arexxcommands . . . . .     | 103 |
| 1.321bum_createmsgport . . . . .     | 103 |
| 1.322bum_deletemsgport . . . . .     | 104 |
| 1.323bum_creatorexxmsg . . . . .     | 105 |
| 1.324bum_deleterexxmsg . . . . .     | 105 |
| 1.325bum_clearrexxmsg . . . . .      | 105 |
| 1.326bum_fillrexxmsg . . . . .       | 106 |
| 1.327bum_createargstring . . . . .   | 108 |
| 1.328bum_deleteargstring . . . . .   | 108 |
| 1.329bum_sendrexxcommand . . . . .   | 109 |
| 1.330bum_replyrexxmsg . . . . .      | 112 |
| 1.331bum_getrexxresult . . . . .     | 113 |
| 1.332bum_getrexxcommand . . . . .    | 113 |
| 1.333bum_getresultstring . . . . .   | 114 |
| 1.334bum_wait . . . . .              | 114 |
| 1.335bum_rexxevent . . . . .         | 115 |
| 1.336bum_isrexxmsg . . . . .         | 115 |
| 1.337bum_rexxerror . . . . .         | 116 |
| 1.338bum_agahandling . . . . .       | 116 |
| 1.339bum_agargb . . . . .            | 117 |
| 1.340bum_agapalrgb . . . . .         | 118 |
| 1.341bum_agared . . . . .            | 118 |

---

|                              |     |
|------------------------------|-----|
| 1.342bum_agagree             | 118 |
| 1.343bum_agablue             | 119 |
| 1.344bum_newscreenflags      | 119 |
| 1.345bum_30bitmaphandling    | 119 |
| 1.346bum_newgadgethandling   | 120 |
| 1.347bum_gadgetstatus        | 121 |
| 1.348bum_buttongroup         | 121 |
| 1.349bum_buttonid            | 121 |
| 1.350bum_enabledisable       | 121 |
| 1.351bum_setgadgetstatus     | 122 |
| 1.352bum_newgadgetsexample   | 122 |
| 1.353bum_datetimecommands    | 122 |
| 1.354bum_systemdate          | 123 |
| 1.355bum_date\$              | 123 |
| 1.356bum_numdays             | 124 |
| 1.357bum_dateformat          | 124 |
| 1.358bum_days                | 124 |
| 1.359bum_hoursminssecs       | 124 |
| 1.360bum_environments        | 125 |
| 1.361bum_wbwidth             | 125 |
| 1.362bum_processor           | 125 |
| 1.363bum_newdrawingcommands  | 126 |
| 1.364bum_polypolyf           | 126 |
| 1.365bum_bitplanesbitmap     | 126 |
| 1.366bum_clipblit            | 127 |
| 1.367bum_windowlibadd        | 127 |
| 1.368bum_window              | 127 |
| 1.369bum_positionsuperbitmap | 128 |
| 1.370bum_getputsuperbitmap   | 129 |
| 1.371bum_wtitle              | 129 |
| 1.372bum_closewindow         | 129 |
| 1.373bum_wprintscroll        | 129 |
| 1.374bum_wblit               | 129 |
| 1.375bum_bitmaptowindow      | 130 |
| 1.376bum_eventcq             | 130 |
| 1.377bum_gadgetadd           | 130 |
| 1.378bum_toggle              | 131 |
| 1.379bum_screenlibadd        | 131 |
| 1.380bum_closescreen         | 131 |

---

|                                       |     |
|---------------------------------------|-----|
| 1.381bum_hidescreen . . . . .         | 131 |
| 1.382bum_beepscreen . . . . .         | 131 |
| 1.383bum_movescreen . . . . .         | 132 |
| 1.384bum_screentags . . . . .         | 132 |
| 1.385bum_palettelibadd . . . . .      | 133 |
| 1.386bum_showpalette . . . . .        | 133 |
| 1.387bum_newpalettemode . . . . .     | 134 |
| 1.388bum_newdisplaylibrary . . . . .  | 134 |
| 1.389bum_initcoplist . . . . .        | 134 |
| 1.390bum_createdisplay . . . . .      | 135 |
| 1.391bum_displaybitmap . . . . .      | 135 |
| 1.392bum_displaysprite . . . . .      | 135 |
| 1.393bum_displaypalette . . . . .     | 136 |
| 1.394bum_displaycontrols . . . . .    | 136 |
| 1.395bum_displayadjust . . . . .      | 137 |
| 1.396bum_newasllibrary . . . . .      | 137 |
| 1.397bum_aslfilerequest\$ . . . . .   | 138 |
| 1.398bum_aslfontrequest . . . . .     | 138 |
| 1.399bum_aslscreenrequest . . . . .   | 139 |
| 1.400bum_newgadtoolslibrary . . . . . | 140 |
| 1.401bum_attachgtlist . . . . .       | 142 |
| 1.402bum_gttags . . . . .             | 142 |
| 1.403bum_gtgadptr . . . . .           | 143 |
| 1.404bum_gtbevelbox . . . . .         | 143 |
| 1.405bum_gtchangelist . . . . .       | 143 |
| 1.406bum_gtsetattrs . . . . .         | 143 |
| 1.407bum_printerlib . . . . .         | 143 |
| 1.408bum_checkprt . . . . .           | 144 |
| 1.409bum_prtcommand . . . . .         | 144 |
| 1.410bum_prttext . . . . .            | 145 |
| 1.411bum_hardcopy . . . . .           | 145 |
| 1.412bum_consolelib . . . . .         | 146 |
| 1.413bum_openconsole . . . . .        | 146 |
| 1.414bum_printcon . . . . .           | 146 |
| 1.415bum_nprintcon . . . . .          | 146 |
| 1.416bum_closeconsole . . . . .       | 147 |
| 1.417bum_crunchlib . . . . .          | 147 |
| 1.418bum_implode . . . . .            | 147 |
| 1.419bum_deplode . . . . .            | 147 |

---

|                                     |     |
|-------------------------------------|-----|
| 1.420bum_crmdec crunch . . . . .    | 148 |
| 1.421bum_ppdec crunch . . . . .     | 148 |
| 1.422bum_localelib . . . . .        | 149 |
| 1.423bum_islocale . . . . .         | 149 |
| 1.424bum_usecatalog . . . . .       | 149 |
| 1.425bum_freecatalog . . . . .      | 150 |
| 1.426bum_getlocalestr . . . . .     | 150 |
| 1.427bum_requesterlibrary . . . . . | 150 |
| 1.428bum_amigasupportlib . . . . .  | 150 |
| 1.429bum_allocmem . . . . .         | 151 |
| 1.430bum_freemem . . . . .          | 151 |
| 1.431bum_iseven . . . . .           | 151 |
| 1.432bum_searchstring . . . . .     | 151 |
| 1.433bum_elmorelib . . . . .        | 152 |
| 1.434bum_elmoredos . . . . .        | 152 |
| 1.435bum_chdir . . . . .            | 153 |
| 1.436bum_pathlock . . . . .         | 153 |
| 1.437bum_copyfile . . . . .         | 153 |
| 1.438bum_setcopybuffer . . . . .    | 154 |
| 1.439bum_namefile . . . . .         | 154 |
| 1.440bum_makedir . . . . .          | 154 |
| 1.441bum_moreentries . . . . .      | 154 |
| 1.442bum_entryname\$ . . . . .      | 155 |
| 1.443bum_entrydir . . . . .         | 155 |
| 1.444bum_entrybit\$ . . . . .       | 155 |
| 1.445bum_entrysize . . . . .        | 155 |
| 1.446bum_entrydate . . . . .        | 155 |
| 1.447bum_entryhour . . . . .        | 156 |
| 1.448bum_entrycomment\$ . . . . .   | 156 |
| 1.449bum_elmoredosexample . . . . . | 156 |
| 1.450bum_analyzedisk . . . . .      | 157 |
| 1.451bum_diskunit . . . . .         | 157 |
| 1.452bum_diskerrs . . . . .         | 157 |
| 1.453bum_diskcapacity . . . . .     | 157 |
| 1.454bum_diskused . . . . .         | 158 |
| 1.455bum_diskfree . . . . .         | 158 |
| 1.456bum_diskblocks . . . . .       | 158 |
| 1.457bum7main . . . . .             | 158 |
| 1.458bum7_newlibs . . . . .         | 161 |

---

|                                   |     |
|-----------------------------------|-----|
| 1.459romulusmain . . . . .        | 161 |
| 1.460riencrypt . . . . .          | 162 |
| 1.461reqtoolsmain . . . . .       | 163 |
| 1.462progressmain . . . . .       | 164 |
| 1.463nreq1 . . . . .              | 164 |
| 1.464nreq2 . . . . .              | 165 |
| 1.465nreq3 . . . . .              | 165 |
| 1.466nreq4 . . . . .              | 166 |
| 1.467nreq5 . . . . .              | 167 |
| 1.468nreq6 . . . . .              | 167 |
| 1.469nreq7 . . . . .              | 167 |
| 1.470nreq8 . . . . .              | 168 |
| 1.471nreq9 . . . . .              | 168 |
| 1.472nreq10 . . . . .             | 168 |
| 1.473nreq11 . . . . .             | 169 |
| 1.474nreq12 . . . . .             | 169 |
| 1.475nreq13 . . . . .             | 169 |
| 1.476nreq14 . . . . .             | 169 |
| 1.477nreq15 . . . . .             | 170 |
| 1.478nreq16 . . . . .             | 170 |
| 1.479nreq17 . . . . .             | 170 |
| 1.480nreq18 . . . . .             | 170 |
| 1.481nreq19 . . . . .             | 171 |
| 1.482nreq20 . . . . .             | 171 |
| 1.483nreq21 . . . . .             | 171 |
| 1.484nreq22 . . . . .             | 171 |
| 1.485nreq23 . . . . .             | 172 |
| 1.486nreq24 . . . . .             | 172 |
| 1.487nreq25 . . . . .             | 173 |
| 1.488nreq26 . . . . .             | 173 |
| 1.489nreq27 . . . . .             | 173 |
| 1.490nreq28 . . . . .             | 177 |
| 1.491bum7_fuzziesreqlib . . . . . | 180 |
| 1.492bum7_colourrequest . . . . . | 181 |
| 1.493bum7_conbase . . . . .       | 181 |
| 1.494bum7_dosbase . . . . .       | 182 |
| 1.495bum7_filefilter . . . . .    | 182 |
| 1.496bum7_filereqsize . . . . .   | 182 |
| 1.497bum7_filestructure . . . . . | 182 |

---

|                                      |     |
|--------------------------------------|-----|
| 1.498bum7_getstring\$ . . . . .      | 182 |
| 1.499bum7_gfxbase . . . . .          | 183 |
| 1.500bum7_intbase . . . . .          | 183 |
| 1.501bum7_maxselect\$ . . . . .      | 183 |
| 1.502bum7_nextfile\$ . . . . .       | 183 |
| 1.503bum7_reqcolours\$ . . . . .     | 184 |
| 1.504bum7_reqfilerequest\$ . . . . . | 184 |
| 1.505bum7_reqfontsize . . . . .      | 185 |
| 1.506bum7_reqbase . . . . .          | 185 |
| 1.507bum7_rexbase . . . . .          | 185 |
| 1.508bum7_textrequest . . . . .      | 186 |
| 1.509bum7_texttimeout . . . . .      | 186 |
| 1.510bum7_elmoreinclud . . . . .     | 186 |
| 1.511elmore_includeutil . . . . .    | 187 |
| 1.512bum7_incsound . . . . .         | 189 |
| 1.513bum7_incbitmap . . . . .        | 190 |
| 1.514bum7_incmod . . . . .           | 191 |
| 1.515bum7_incmed . . . . .           | 191 |
| 1.516bum7_incshape . . . . .         | 191 |
| 1.517bum7_incnextshape . . . . .     | 191 |
| 1.518bum7_inctext\$ . . . . .        | 192 |
| 1.519bum7_saveincdata . . . . .      | 192 |
| 1.520bum7_incdata . . . . .          | 193 |
| 1.521bum7_incsz . . . . .            | 193 |
| 1.522bum7_freeincdata . . . . .      | 194 |
| 1.523bum7_incdataabs . . . . .       | 194 |
| 1.524bum7_aaronsiconlib . . . . .    | 194 |
| 1.525aaron_geticoninfo . . . . .     | 195 |
| 1.526aaron_icontool\$ . . . . .      | 195 |
| 1.527aaron_iconsubtool\$ . . . . .   | 196 |
| 1.528aaron_icontype . . . . .        | 196 |
| 1.529aaron_iconstack . . . . .       | 196 |
| 1.530aaron_iconeftool\$ . . . . .    | 197 |
| 1.531bum7_newcommands . . . . .      | 197 |
| 1.532bum7_bank . . . . .             | 197 |
| 1.533bum7_blockscroll . . . . .      | 198 |
| 1.534bum7_clipblitmode . . . . .     | 198 |
| 1.535bum7_customcolors . . . . .     | 198 |
| 1.536bum7_customstring . . . . .     | 198 |

---



|                                      |     |
|--------------------------------------|-----|
| 1.537bum7_cyclepalette . . . . .     | 199 |
| 1.538bum7_decodeilbm . . . . .       | 199 |
| 1.539bum7_decodemodmodule . . . . .  | 199 |
| 1.540bum7_decodepalette . . . . .    | 200 |
| 1.541bum7_decodeshapes . . . . .     | 200 |
| 1.542bum7_decodesound . . . . .      | 200 |
| 1.543bum7_displaydblscan . . . . .   | 200 |
| 1.544bum7_displayrainbow . . . . .   | 201 |
| 1.545bum7_displayrgb . . . . .       | 201 |
| 1.546bum7_displayscroll . . . . .    | 201 |
| 1.547bum7_displayuser . . . . .      | 202 |
| 1.548bum7_duplicatepalette . . . . . | 202 |
| 1.549bum7_fadepalette . . . . .      | 202 |
| 1.550bum7_freemem . . . . .          | 202 |
| 1.551bum7_fromcli . . . . .          | 202 |
| 1.552bum7_gameb . . . . .            | 203 |
| 1.553bum7_gtarrowsize . . . . .      | 203 |
| 1.554bum7_gtstatus . . . . .         | 204 |
| 1.555bum7_initpalette . . . . .      | 204 |
| 1.556bum7_initshape . . . . .        | 204 |
| 1.557bum7_loadbank . . . . .         | 204 |
| 1.558bum7_numpars . . . . .          | 205 |
| 1.559bum7_paletterange . . . . .     | 205 |
| 1.560bum7_par\$ . . . . .            | 205 |
| 1.561bum7_parpath\$ . . . . .        | 205 |
| 1.562bum7_popinput . . . . .         | 206 |
| 1.563bum7_readserialmem . . . . .    | 206 |
| 1.564bum7_savepalette . . . . .      | 207 |
| 1.565bum7_setperiod . . . . .        | 207 |
| 1.566bum7_writeserialmem . . . . .   | 207 |
| 1.567allcommands . . . . .           | 207 |
| 1.568ind_a . . . . .                 | 208 |
| 1.569ind_b . . . . .                 | 208 |
| 1.570ind_c . . . . .                 | 209 |
| 1.571ind_d . . . . .                 | 209 |
| 1.572ind_e . . . . .                 | 210 |
| 1.573ind_f . . . . .                 | 210 |
| 1.574ind_g . . . . .                 | 210 |
| 1.575ind_h . . . . .                 | 211 |

---

|                      |     |
|----------------------|-----|
| 1.576ind_i . . . . . | 211 |
| 1.577ind_j . . . . . | 212 |
| 1.578ind_k . . . . . | 212 |
| 1.579ind_l . . . . . | 212 |
| 1.580ind_m . . . . . | 212 |
| 1.581ind_n . . . . . | 213 |
| 1.582ind_o . . . . . | 213 |
| 1.583ind_p . . . . . | 213 |
| 1.584ind_q . . . . . | 214 |
| 1.585ind_r . . . . . | 214 |
| 1.586ind_s . . . . . | 214 |
| 1.587ind_t . . . . . | 215 |
| 1.588ind_u . . . . . | 215 |
| 1.589ind_v . . . . . | 215 |
| 1.590ind_w . . . . . | 215 |
| 1.591ind_x . . . . . | 216 |
| 1.592ind_y . . . . . | 216 |
| 1.593ind_z . . . . . | 216 |

---

## Chapter 1

# BlitzBasic 2 Library Commands V1.2

### 1.1 BlitzBasic 2 Library Commands

BLITZ BASIC 2 LIBRARY GUIDE V1.3

Last updated on: 16-10-1994

written by Jurgen Valks

mail me for futher updates: j.valks@hsbos.nl

NOW INCLUDING THE BUM MAGAZINE COMMANDS!!!: Thanks Simon!

Make a choice

All PD/Update commands

See all the PD libraries included

BUM Magazines 1-6 / Commands

BUM 7

INFO

### 1.2 libraryindex

This file contains all the commands of the following libraries:

CIA-TRACKER library

COMMODITIES library

ELMORE library

FX library

FNS library

FUNC library

GFX library

PACK library

PCF library

REQ library

RIANIM library

TOOLTYPES library

TRACKDISK library

WB library

ZONE-JOY library

## 1.3 trackmain

```
=====
=   T R A C K D I S K       L I B R A R Y   =
=====
```

(C)1994 Reflective Images

Written by Steve Matty.

You can do whatever the hell you like to this library but must still give me some credit!

Command List :

```
CloseDisk
MotorOn
MotorOff
=FormatTrack
=OpenDisk
=ReadSector
=WriteSector
=WriteBoot
```

## 1.4 track\_opendisk

Command : OpenDisk

-----  
Modes : Amiga  
Syntax : success=OpenDisk(unit#)

This attempts to open unit 'unit#' of the trackdisk.device, for use with the other commands in this library. A return value of 0 indicates failure, -1 indicates success.

## 1.5 track\_motoron

Statement : MotorOn

-----  
Modes : Amiga  
Syntax : MotorOn unit#

This attempts to switch the drive motor on of the previously opened trackdisk unit (called with OpenDisk). You must call this command before attempting to ReadSector/WriteSector/FormatTrack/WriteBoot

---

## 1.6 track\_motoroff

Statement : MotorOff

---

Modes : Amiga

Syntax : MotorOff unit#

This turns the drive motor of 'unit#' off.

## 1.7 track\_rs

Command : ReadSector

---

Modes : Amiga

Syntax : [success=]ReadSector(unit#,sector#,buffer[,numsectors])

This attempts to read 'numsectors' sectors from a trackdisk device which has been opened with OpenDisk and has its Motor On. If numsectors is omitted then 1 sector is read. The data is read into the memory location pointed to by 'buffer'.

WARNING! Please MAKE SURE the MOTOR is \_ON\_ otherwise, all hell will break loose!!!

## 1.8 track\_ws

Command : WriteSector

---

Modes : Amiga

Syntax : [success=]WriteSector(unit#,sector#,buffer[,numsectors])

This is the same as ReadSector except..... it writes! (and no, I am not being lazy by not typing any decent docs)

## 1.9 track\_ft

Command : FormatTrack

---

Modes : Amiga

Syntax : [success=]FormatTrack(unit#,track#,buffer[,numtracks])

This does a TD\_FORMAT on the specified track number. Buffer should point to the area of memory which the track should be formatted with. I don't know why this command exists - but hey, it might come in useful.

---

## 1.10 track\_closedisk

Statement : CloseDisk

---

Modes : Amiga

Syntax : CloseDisk unit#

This closes the trackdisk.device of the specified unit#. The Motor is automatically switched off if it is already on.

## 1.11 track\_wb

Command : WriteBoot

---

Modes : Amiga

Syntax : [success=]WriteBoot(unit#[,buffer])

This writes 1kilobyte of data to the bootblock of the specified disk unit. The optional buffer parameter should point to an area of memory with which to write the bootblock.

## 1.12 rianimmain

RIAnim Library v1.0

---

By Stephen McNamara  
(c)1994 Reflective Images

### RIANIM COMMANDS

This library enables the playback of both Anim5 and Anim7 format animations. It allows you to playback animations at any co-ordinate in a bitmap and supports different palettes for frames of the animation. It also allows you to playback animations from FAST ram, thus you can now play massive animations that can only fit in FAST ram.

When playing back animations you must make sure that your display is double-buffered. Please refer to the Blitz manual for information about how anims can be played back properly - or look at the example program included with this file.

Note: there may still be a few bugs in the animation playback routines - if you have any problems or spot any bugs then please contact us at the address given in the main file of this archive.

## 1.13 rianimindex

---

These are the RIANIM library commands:

```
AnimLoop
RIAnimInit
RINextAnimFrame
=RIAnimInit
=RINextAnimFrame
```

## 1.14 rianim\_init

Statement/Function: RIAnimInit

---

Modes : Amiga/Blitz

Syntax: [suc=]RIAnimInit(address,bitmap#,palette#[,xy\_offset])

This command attempts to take an animation held in memory (CHIP or FAST) and identify it as a supported animation format. If it identifies it okay it will set up the animation by unpacking frame 1 of the anim onto the specified bitmap and copying the palette to the specified palette object.

You must ensure that the bitmap is big and deep enough to actually hold the animation. At the moment there is no checking of the bitmap size. The palette object you give is automatically resized to the size of the palette in the animation.

The optional parameter allows you to play an animation at an offset into a bitmap. Thus you could center a half screen animation on a bitmap. The offset is given as a byte offset from the start of each bitplane. It is calculated like this:

$$\text{offset} = (X/8) + (Y * (\text{pixel\_width}/8))$$

where: X and Y are your co-ordinates  
 pixel\_width is the width of your bitmap.

If used as a function, this command returns true for a successful initialise or false for failure.

## 1.15 rianim\_nextf

Statement/Function: RINextAnimFrame

---

Modes : Amiga/Blitz

Syntax: [suc=]RINextAnimFrame bitmap#

This command attempts to unpack the next frame of a previously initialised animation onto the specified bitmap. It returns true or false to say whether it succeeded or not.

---

## 1.16 rianim\_loop

Statement: AnimLoop

Modes : Amiga/Blitz

Syntax: AnimLoop ON|OFF

This command allows you to control the looping mode of the animation. With animloop off, playback of an animation will stop at the last frame of it. Any attempt to draw another frame will fail. With it on, though, the animation will loop around.

Note: you must ensure that your animation has loop frames at the end of it if you want to loop the animation around. The reverse of this is true for animloop off - the animation must not have loop frames if you don't want it to loop around. If you select animloop off but have looping frames in your anim then the animation will end by displaying a copy of frame 2 of the animation.

## 1.17 commoditiesmain

```
===== Reflective Images Commodities Library V0.9 (C)1994 =====
```

COMMODITIES COMMANDS

Introduction

=====

This library allows the easy use of Commodities. It requires Kickstart 2 or higher.

## 1.18 commoditiesindex

The COMMODITIES library commands:

```
ExchangeAppear
ExchangeDisAppear
ExchangeEnable
ExchangeDisAble
ExchangeKill
ExchangeChangeList
ExchangeUnique
MakeCommodity
SetStatus
SetHotKey
=HotKeyHit
=CommodityEvent
=ExchangeMessage
=CxAppear
=CxDisAppear
```



```
=CxEnable  
=CxDisable  
=CxKill  
=CxChangeList  
=CxUnique
```

## 1.19 comm\_make

Function : MakeCommodity

---

Modes : Amiga

Syntax : success=MakeCommodity(name\$,title\$,description\$)

This command attempts to add your Commodity to the list of commodities. A return value of -1 indicates success, 0 means failure. (not enough memory)

name\$ refers to the name of the Commodity and it should be unique. This is the name that appears when running the Commodity Exchange program. title\$ is the title of your program, e.g. "My Screen Blanker". description\$ is a brief description of your program.

The Commodity Exchange program will then have 'name\$' in its list of Commodities and when a user clicks on your commodity, it will display the title\$ and description\$.

## 1.20 comm\_setkey

Function : SetHotKey

---

Modes : Amiga

Syntax : success=SetHotKey(hotkey#,hotkeydescription\$)

This will add a hotkey event to your commodity so that after a hotkey has been pressed you can find out which one.

e.g.      success=SetHotKey(0,"lalt lshift a")

## 1.21 comm\_hit

Function : HotKeyHit

---

Modes : Amiga

Syntax : hitkeynum=HotKeyHit

This will return the number of the hot key which has been hit since the last 'CommodityEvent' was called, or -1 if no such hotkey has been activated.

---

## 1.22 comm\_event

Function : CommodityEvent

---

Modes : Amiga

Syntax : anyevent=CommodityEvent

This looks to see if either

- a) A hotkey has been pressed
- b) A message from Exchange has been received

and returns -1 if such an event occurred, of 0 if nothing has yet happened. This should be inside a Repeat-Until loop, e.g.

```
Repeat
  VWait
  ev.l=Event
  ce.l=CommodityEvent
  hk.l=HotKeyHit      ; This must be used after
Until ev or ce or hk      ; CommodityEvent
```

## 1.23 comm\_setstatus

Statement : SetStatus

---

Modes : Amiga

Syntax : SetStatus on|off

This sets the status of your Commodity to either Active (on) or Inactive (off) - this can be seen by running the Commodities Exchange program.

## 1.24 comm\_exmessage

Function : ExchangeMessage

---

Modes : Amiga

Syntax : messnum.l=ExchangeMessage

This looks to see if the Commodities Exchange has issued you with a message, e.g. Hide Interface, Show Interface. It returns the message ID of the incoming message or 0 for no message.

## 1.25 comm\_cx

Functions: CxAppear/CxDisAppear/CxEnable/CxDisable  
CxKill/CxChangeList/CxUnique

---

Modes : Amiga

---

These are to be used in conjunction with ExchangeMessage, ie

```
em.l=ExchangeMessage
Select em
  Case CxAppear
    Gosub _appear
  Case CxDisAppear
    Gosub _disappear
End Select
```

The functions merely return the ID value associated with that particular Commodities Exchange message.

## 1.26 comm\_ex

Functions: ExchangeAppear/ExchangeDisAppear/ExchangeEnable/  
ExchangeDisable/ExchangeKill/ExchangeChangeList/ExchangeUnique

-----

Modes : Amiga

To be used in conjunction with ExchangeMessage, ie

```
em.l=ExchangeMessage
If em
  If ExchangeAppear then Gosub _appear
  If ExchangeDisAppear then Gosub _disappear
EndIf
```

This is intended as an alternative way of acting upon Exchange Messages.

## 1.27 wbmain

```
;-----
;- WB library version 0.9      -
;- ©1994 Reflective Images    -
;-----
```

WB COMMANDS

This small library provides quick and easy to use commands for accessing AppWindows, AppIcons and AppMenus.

\* PLEASE NOTE \*

This library must have at least V37+ of Workbench/DOS/Icon libraries

This version of the library only enables you to read the FIRST file dragged to an AppWindow/AppIcon or selected from an AppMenu - future versions will have additional commands AppWindowArg/AppIconArg/AppMenuArg which returns the filename of the specified arg. E.g.  
f\$=AppIconArg(1)

---

## 1.28 wbindex

The WB commands:

```
AppEvent
AppWindowEvent
AppIconEvent
AppMenuEvent
AddAppWindow
AddAppIcon
AddAppMenu
DelAppWindow
DelAppIcon
DelAppMenu
AppWindowFile
AppIconFile
AppIconHit
AppMenuFile
AppMenuHit
```

## 1.29 wb\_appevent

Function : AppEvent

---

Modes : Amiga

Syntax : status=AppEvent

This command checks the msg ports of any open AppIcons/AppWindows/AppMenus and if an event has been passed, returns -1. 0 indicates no event has occurred.

e.g.

```
Repeat
  VWait
Until AppEvent
```

## 1.30 wb\_appwindowevent

Function : AppWindowEvent

---

Modes : Amiga

Syntax : status=AppWindowEvent

This command checks the msg ports of any open AppWindows and if an event has been passed, returns -1. 0 indicates no event has occurred.

e.g.

```
Repeat
  VWait
Until AppWindowEvent
```

---

### 1.31 wb\_appiconevent

Function : AppIconEvent

---

Modes : Amiga

Syntax : status=AppIconEvent

This command checks the msg ports of any AppIcons and if an event has been passed, returns -1. 0 indicates no event has occurred.

e.g.

Repeat

VWait

Until AppIconEvent

### 1.32 wb\_appmenuevent

Function : AppMenuEvent

---

Modes : Amiga

Syntax : status=AppMenuEvent

This command checks the msg ports of any AppMenus and if an event has been passed, returns -1. 0 indicates no event has occurred.

e.g.

Repeat

VWait

Until AppMenuEvent

### 1.33 wb\_addappwindow

Function : AddAppWindow

---

Modes : Amiga

Syntax : success=AddAppWindow(windownumber)

This command attempts to make the window specified by 'windownumber' to become an AppWindow. -1 means success, 0 means failure. There is a currently limit of 4 AppWindows.

### 1.34 wb\_addappicon

Function : AddAppIcon

---

Modes : Amiga

Syntax : success=AddAppIcon(id,text\$,iconname\$)

This command attempts to place an AppIcon onto the Workbench desktop.

---

ID is a unique identification number. Text\$ is text to display underneath the AppIcon and Iconname\$ is the name of the file to use the Icon imagery. -1 means success, 0 means failure.

e.g.

```
suc=AddAppIcon(0,"Test","Work:Test")
If suc=0 Then End
```

### 1.35 wb\_addappmenu

Function : AddAppMenu

---

Modes : Amiga

Syntax : success=AddAppMenu(id,text\$)

This command tries to add 'text\$' to the Tools menu of Workbench. ID is a unique identification number. Returns -1 for success, 0 for failure.

e.g.

```
suc=AddAppMenu(0,"Blitz2")
If suc=0 Then End
```

### 1.36 wb\_appwindowfile

Function : AppWindowFile

---

Modes : Amiga

Syntax : filename\$=AppWindowFile(windownumber)

This command returns the complete path of the file which was dragged to the AppWindow. If the file was in fact a directory a '/' is appended. An empty string signifies nothing was Dragged.

### 1.37 wb\_appiconfile

Function : AppIconFile

---

Modes : Amiga

Syntax : filename\$=AppIconFile(id)

This command returns the complete path of the file which was dragged to the AppIcon. If the file was in fact a directory a '/' is appended. An empty string signifies nothing was Dragged.

### 1.38 wb\_appmenufile

Function : AppMenuFile

---

Modes : Amiga

Syntax : filename\$=AppMenuFile(id)

This command returns the complete path of the file which was selected when the AppMenu was hit. If the file was in fact a directory a '/' is appended. An empty string signifies nothing was selected.

### 1.39 wb\_appiconhit

Function : AppIconHit

---

Modes : Amiga

Syntax : status=AppIconHit(id)  
idnumber=AppIconHit

This command returns the status of the AppIcon <id>. -1 = The icon was doubleclicked, 0 = nothing has happened.

If no argument is supplied, the function returns the number of the doubleclicked icon, or -1 for none.

### 1.40 wb\_appmenuhit

Function : AppMenuHit

---

Modes : Amiga

Syntax : status=AppMenuHit(id)  
idnumber=AppMenuHit

This returns the status of the AppMenu item <id>. -1 = This menu item was selected, 0 = This menu item was not selected.

If no argument is given, the function returns the number of the selected menu item, or -1 for none.

### 1.41 wb\_delapp

Function : DelAppWindow/DelAppIcon/DelAppMenu

---

Modes : Amiga

Syntax : success=DelAppWindow[(number)]  
success=DelAppIcon[(id)]  
success=DelAppMenu[(id)]

These commands will remove the AppWindow/AppIcon/AppMenu from the system and free up the associated message ports.

\*\*\* IMPORTANT \*\*\* You must call DelAppWindow BEFORE closing a window, or your machine will GURU!

---

## 1.42 toolmain

Reflective Images Tooltypes Library  
=====

Release #2

TOOLTYPES COMMANDS

By Stephen McNamara, inspired by the collection of tooltype functions by Mark Tiffany.

(c)1994 Reflective Images

This library contains commands to allow the reading, comparing and setting of tooltypes in a .info file. All tooltype names are case insignificant but as a general sort of rule they should really be completely uppercase.

This library attempts to open the system Icon.library, if the opening of this library fails ALL commands in this library will be unusable. Almost every function in this library relies on the Icon.library completely.

Changed commands:

FindToolValue - now returns "" if the tooltype was found but did not have a value (e.g. DONOTWAIT). You should now use FindToolType to check for the existence of a tooltype and then use FindToolValue to get its value.

PutIconObject - now has an optional parameter that lets you set the type of the file. See SetIconType for more information about possible values for this command.

## 1.43 toolindex

Command list:

- GetIconObject
- PutIconObject
- FreeIconObject
- FindToolValue
- FindToolNumber
- IconDefaultTool
- IconRender
- MatchToolValue
- SetIconHit
- SetIconType
- SetToolValue
- ShapeToIcon
- NewToolType
- ClearToolTypes
- =FindToolType



## 1.44 tool\_seticonhit

Statement: SetIconHit

---

Modes : Amiga

Syntax : SetIconHit width#,height#

This command sets the size of the 'hit-box' around the image in the currently loaded .info file. This is only of use if your info file has an image associated with it. You should note that the hit box should never be smaller, horizontally or vertically, than the actual size of the image.

When Workbench renders an image for a file onto a window, it automatically puts a 3d box border around it. The size of the hit box determines the size of this border. Your image will always be located in the top left border of the hit box.

## 1.45 tool\_shapetoicon

Statement: ShapeToIcon

---

Modes : Amiga

Syntax : ShapeToIcon shape#[,shape#]

This command lets you change the images associated with the currently loaded .info file. What it does is to set up the .info file in memory so that when it is saved out next, the images you give are saved out with it.

Using this command does not actually copy any shape data around memory, all it does it place a pointer in the .info to the shape data. You should therefore not delete a shape WITHOUT first saving the .info file to disk (that is of course if you want to keep your changes).

When you use this command, the hit box area for the .info file is automatically set to the size of the first shape given. It is important, therefore, that the second shape is not larger than the first. When you give a second shape, this shape is set up to be the 'alternate render' image, this means that this is the second image associated with the .info file (remember the two windows in the IconEditor?)

## 1.46 tool\_seticontype

Statement: SetIconType

---

Modes : Amiga

Syntax : SetIconType type#

This command lets you specify the type of the file associated with the currently loaded .info file. The type describes whether or not the file

---

is a tool or project etc....., and can take the following values:

- 1 Disk
- 2 Drawer
- 3 Tool
- 4 Project
- 5 Trashcan

This command is identical to the menu in the IconEditor 'Type'.

## 1.47 tool\_iconrender

Statement: IconRender

---

Modes : Amiga

Syntax : IconRender mode#

This command lets you specify what Workbench should do to the icons image when the user clicks on it. It lets you choose whether a separate image should be displayed or whether the current image should just be modified. Mode# is made up of several different values that should be added together to create different effects, these are:

- 0 Complement the select box
- 1 Draw a box around the image
- 2 Draw the alternate image
- 3 Don't highlight
- 4 Double image icon

Thus if you wanted an icon to change to a second image when selected, and the icon has a second image, you would set the render to 6 (4+2). This would mean that you had a second image (4) and that you wanted it to be displayed when you select the icon (2).

Note: when you use ShapeToIcon with two shape numbers the IconRender is automatically set to 6.

## 1.48 tool\_icondefaulttool

Statement: IconDefaultTool

---

Modes : Amiga

Syntax : IconDefaultTool tool\$

This command lets you set the default tool for the current .info file. The default tool only applies for project files (see SetIconType) and is the program that is run when you double click the icon file (e.g. all Blitz2 source code files saved out with icons have the default tool 'Blitz2:Blitz2').

This command can be used to make a file saved out by your program double-clickable. I have used it myself to make map files saved out

---

from my editor automatically load the editor when selected.

## 1.49 tool\_findtooltype

Statement: FindToolType

---

Modes : Amiga

Syntax : bool=FindToolType (tool\$)

This command simply returns true or false to say whether or not the given tooltype was found in the currently loaded .info file.

## 1.50 tool\_giobject

Statement/Function: GetIconObject

---

Modes : Amiga

Syntax : GetIconObject filename\$  
suc.l=GetIconObject (filename\$)

This command reads in a .info file from disk. The filename given will have '.info' added to the end of it and will be loaded into memory (chip or fast depending on what is available for allocation) as a diskobject. Please refer to the Amiga hardware includes for information about the diskobject structure (or see your Blitz Basic Amigalibs resident file).

If used as a function, this command will return either FALSE for failure or the address of the allocated diskobject in memory.

## 1.51 tool\_piobject

Statement/Function: PutIconObject

---

Modes : Amiga

Syntax : PutIconObject filename\$  
suc.l=PutIconObject (filename\$)

This command takes a diskobject structure reserved and initialised by GetIconObject and saves it out to disk as a .info file for the specified file.

All current tooltypes and values will be saved with the file. The optional parameter allows you to set the type of the file associated with the .info file. See SetIconType for possible values for this parameter. Note that if you leave out this parameter the icontype will not be changed.

---

## 1.52 tool\_fiobject

Statement/Function: FreeIconObject

---

Modes : Amiga  
Syntax : FreeIconObject  
          suc.l=FreeIconObject

This command will free up the diskobject that is currently being used. It will not save out any tooltype changes and will free up the memory without ANY changes being made to the .info file loaded from disk.

## 1.53 tool\_ftvalue

Function: FindToolValue

---

Modes : Amiga  
Syntax : toolval\$=FindToolValue(tooltype\$)

This function returns the value of the selected tooltype. The return value is a string, and is the part of the tooltype string after the "=" in the tooltype entry. The tooltype\$ string that you pass can be in either lower case or uppercase since all testing is done in uppercase, although as a general rule, all tooltypes should be in uppercase.

This function will return a null string if the named tooltype was not found in the list of tooltypes for the file. If the selected tooltype did not have an actual value (e.g. DONOTWAIT) then this function will return the string "!!".

## 1.54 tool\_ftnumber

Function: FindToolNumber

---

Modes : Amiga  
Syntax : toolval\$=FindToolNumber(tooltype\$)

This command will return the FULL tooltype string in the selected tooltype position. If the tooltype number does not exist then "" will be returned.

Example: tooltypes: "DONOTWAIT"  
          "CLOCKX=157"

FindToolNumber(0) will return "DONOTWAIT"  
FindToolNumber(1) will return "CLOCKX"  
FindToolNumber(49) will return ""

## 1.55 tool\_mtvalue

---

Function: MatchToolValue

---

Modes : Amiga

Syntax : suc.l=MatchToolValue(tooltype\$,value\$)

This command searches the current list of tooltypes for the selected tooltype and, if found, attempts to match the values of it with the given value. This command uses the operating system call MatchToolType(), it is able to cope with a tool having more than one value,

e.g. LANGUAGE=ENGLISH|FRENCH

(the | is used to show OR, thus this tooltype

means that LANGUAGE equals ENGLISH or FRECH)

When using match toolvalue with this tooltype, TRUE will  
be returned when you use value\$="ENGLISH" or "FRENCH"  
but not (I think) both.

You should note that for this command, the case of VALUE\$ is insignificant.

## 1.56 tool\_stvalue

Statement/Function: SetToolValue

---

Modes : Amiga

Syntax : SetToolValue tooltype\$,value\$

suc.l=SetToolValue (tooltype\$,value\$)

This command will attempt to set a tooltype that is currently defined to the specified value. When used as a function, this command will return TRUE for success or FALSE for failure, possible failures include: no icon file loaded and tooltype not found. When used, this command attempts to allocate memory to store the new tooltype information in, it does not attempt to free up the old memory allocated to the tooltype.

This means that you should keep alterations of tooltypes to a minimum. The best way to manage tooltypes is:

1. Open the icon
2. Read the tooltypes
3. Close the icon
4. ... do your program ...
5. Open the icon
6. Alter the tooltypes
7. Save the icon

Using this series of events, you'll keep memory usage (which will be fairly small anyway...) to the very minimum.

## 1.57 tool\_nttype

---

Statement/Function: NewToolType

---

Modes : Amiga

Syntax : NewToolType tooltype\$,value\$  
           suc.l=NewToolType (tooltype\$,value\$)

This command allocates a new tooltype in the currently loaded .info file and sets its value. No check is done to see if the tooltype already exists and the new tooltype is added to the end of the current list of tooltypes.

## 1.58 tool\_cttypes

Statement: ClearToolTypes

---

Modes : Amiga

Syntax : ClearToolTypes

This command is used to clear all the tooltype information from the currently loaded .info file. It does not attempt, though, to free up all the memory reserved to store tooltype names and values, you should therefore not use this command too many times in a row. Once you have used this command, any attempt to read tooltype values will fail.

## 1.59 reqmain

```
;-----
;- ReqLib.library version 0.9 -
;- ©1994 Reflective Images    -
;-----
```

REQ COMMANDS

The well known Req.Library for the Amiga is one of the best file requesters around, so I wrote this small lib to enable Blitz users to have Req requesters in their programs with the minimum of hassle.

\* PLEASE NOTE \* That this library must have at least v2.2 of the Req.Library available.

## 1.60 reqindex

Command List:

ReqOutput  
 ReqFileRequest  
 ReqFileLoc

REQ flags, structure

---

## 1.61 req\_output

Statement: ReqOutput

---

Modes : Amiga

Syntax : ReqOutput windownumber

This command sets the ReqLib.library to put all requesters onto the window specified by <windownumber>. If this command is not called then the requesters will appear on the Default Public Screen.

## 1.62 req\_filerequest

Function: ReqFileRequest

---

Modes : Amiga Syntax : pathname\$=ReqFileRequest([title\$[,flags]])

This opens up the standard file requester. If <title\$> is given then the text will appear on the requester title bar. The optional <flags> parameter specifies a flag setting (see below) for use. If this is omitted then the last flag setting is used.

## 1.63 req\_fileloc

Function: ReqFileLoc

---

Modes : Amiga/Blitz

Syntax : memorylocation.l=ReqFileLoc

This simply returns the address in memory where the Req.Library file requester structure is located.

## 1.64 req\_flags

FLAGS

=====

Below is a list of possible flag settings and a brief description of each.

```
#FRQSHOWINFOB    = %1    ;Set to show .info files. Default is not.
#FRQEXTSELECTB    = %10   ;Extended select. Default is not.
#FRQCACHINGB      = %100   ;Directory caching. Default is not.
#FRQGETFONTSB     = %1000  ;Font requester rather than a file requester.
#FRQINFOGADGETB   = %10000 ;Hide-info files gadget.
#FRQHIDEWILDSB    = %100000 ;DON'T want 'show' and 'hide' string gadgets.
#FRQABSOLUTEXYB   = %1000000 ;Use absolute x,y positions rather than centering ↵
                        on mouse.
#FRQCACHEPURGEB   = %10000000 ;Purge the cache whenever the directory date stamp ↵
                        changes if this is set.
```

---

```
#FRQNOHALFCACHEB = %1000000000 ;Don't cache a directory unless it is completely ←
    read in when this is set.
#FRQNOSORTB      = %10000000000 ;DON'T want sorted directories.
#FRQNODRAGB      = %100000000000 ;DON'T want a drag bar and depth gadgets.
#FRQSAVINGB      = %1000000000000 ;Are selecting a file to save to.
#FRQLOADINGB     = %10000000000000 ;Are selecting a file(s) to load from.
#FRQDIRONLYB     = %100000000000000 ;Allow the user to select a directory, rather ←
    than a file.
```

```
STRUCTURE
=====
```

Below is a description of the Req.Library file requester structure.

```
STRUCTURE AFileRequester,0
    UWORD frq_VersionNumber ;MUST BE REQVERSION!!!!!!!!!!!!!!!!!!!!!!

;You will probably want to initialize these three variables.
    APTR frq_Title ; Hailing text
    APTR frq_Dir ; Directory array (must be DSIZE+1 characters long)
    APTR frq_File ; Filename array (must be FCHARS+1 characters long)
        ; If you initialize this variable then the file requester will place the ←
        complete path name in here on exit.
    APTR frq_PathName ; Complete path name array - (must be DSIZE+FCHARS+2 long)
        ; If you want the file requester to pop up on your custom screen, put ←
        one of your window pointers here.
        ; Or better yet, you can leave this field zeroed and put a pointer to ←
        one of your windows in the
        ; pr_WindowPtr field in your process structure.
    APTR frq_Window ; Window requesting or NULL
        ; Initialize these to the number of lines and columns you want to appear ←
        in the inner window that
        ; displays the file names. If you leave these set to zero then default ←
        values will be used.
    UWORD frq_MaxExtendedSelect ; Zero implies a maximum of 65535, as long as ←
        FRQEXTSELECT is set.
    UWORD frq_numlines ; Number of lines in file window.
    UWORD frq_numcolumns ; Number of columns in file window.
    UWORD frq_devcolumns ; Number of columns in device window.
    ULONG frq_Flags ; Various - umm - flags. See above for more info.
    UWORD frq_dirnamescolor ;These five colors will all default
    UWORD frq_filenamescolor ;to color one if you don't specify
    UWORD frq_devicenamescolor ;a color (ie; if you specify color zero).
    UWORD frq_fontnamescolor ;If you want color zero to be used, specify
    UWORD frq_fontsizescolor ;color 32, or some other too large number
        ;which mods down to zero.

    UWORD frq_detailcolor ;If both of these colors are specified as
    UWORD frq_blockcolor ;zero then the block pen will be set to one.

    UWORD frq_gadgettextcolor ;The color for the text of the five boolean gadgets. ←
        Defaults to 1.
    UWORD frq_textmessagecolor ;The color for the message at the screen top. ←
        Defaults to 1.
    UWORD frq_stringnamecolor ;The color for the words Drawer, File, Hide and Show. ←
        Defaults to 3.
```



```

UWORD frq_stringgadgetcolor ;The color for the borders of the string gadgets.  ←
    Defaults to 3.
    ;Unfortunately it is not possible to specify
    ;the color of the actual text in an Intuition
    ;string gadget.
UWORD frq_boxbordercolor ;The color for the boxes around the file and directory  ←
    areas. Defaults to 3.
UWORD frq_gadgetboxcolor ;The color for the boxes around the five boolean  ←
    gadgets. Defaults to 3.

STRUCT frq_RFU_Stuff,36 ;This area, which is reserved for
    ;future use, should all be zero.

STRUCT frq_DirDateStamp,ds_SIZEOF ; A copy of the cached directories date  ←
    stamp.
    ; There should never be any need to change this.

UWORD frq_WindowLeftEdge; ;These two fields are only used when the
UWORD frq_WindowTopEdge; ;FRQABSOLUTEXY flag is set. They specify
    ;the location of the upper left hand
    ;corner of the window.

UWORD frq_FontYSize ;These fields are used to return the selected
UWORD frq_FontStyle ;font size and style, only applicable when the
    ;font bit is set.

    ;If you set the extended select bit and the user extended selects, the  ←
    list of filenames will start from here.
APTR frq_ExtendedSelect ; Linked list of ESStructures if more than one  ←
    filename is chosen.
    ;All of the following variables you shouldn't need to touch. They  ←
    contain fields that the file
    ;requester sets and likes to preserve over calls, just to make life  ←
    easier for the user.
STRUCT frq_Hide,WILDLENGTH+2 ; Wildcards for files to hide.
STRUCT frq_Show,WILDLENGTH+2 ; Wildcards for files to show.
WORD frq_FileBufferPos ; Cursor's position and first
WORD frq_FileDispPos ; displayed character number in
WORD frq_DirBufferPos ; the three string gadgets. No
WORD frq_DirDispPos ; need to initialized these if
WORD frq_HideBufferPos ; you don't want to.
WORD frq_HideDispPos
WORD frq_ShowBufferPos
WORD frq_ShowDispPos

; The following fields are PRIVATE! Don't go messing with them or
; wierd things may/will happen. If this isn't enough of a warning, go read
; the one in intuition.h, that should scare you off.

APTR frq_Memory ; Memory allocated for dir entries.
APTR frq_Memory2 ; Used for currently hidden files.
APTR frq_Lock ; Contains lock on directories being read across calls.
STRUCT frq_PrivateDirBuffer,DSIZE+2 ; Used for keeping a record of which
    ; directory we have file names for.
APTR frq_FileInfoBlock
WORD frq_NumEntries
WORD frq_NumHiddenEntries

```

---

```
WORD   frq_filestartnumber
WORD   frq_devicestartnumber
LABEL  frq_SIZEOF
```

Enjoy!

Steve.

## 1.65 pcfmain

```
PCF Library - Picture Crunch Format
=====
```

-Brought to you by FUNdamental-

PCF COMMANDS

About This Archive

-----

This archive contains:

- o A new library of commands for Blitz Basic 2
- o A compiled blitz program to generate PCF files from IFF files
- o A Blitz Basic and ASCII version of the same demo program, to show use of the commands
  - o A pre-converted image
- o This file 8)

All coding was written by Nigel Hughes, with a thank you to Steve from Reflective Images for his help with AllocDosObject and addressing objects in libraries. Not to mention the excellent RIB libraries.

About PCF Format

-----

On the Blitz mailing list, there was a call for a method of protecting graphics from the "general public" I responded by saying,

"Use my library"

And then disappeared to prepare for my finals! Well the finals are over and so here is version one of the PCF Library, version 2 will be out soon, more details later.

PCF is more compact graphics file format, that cannot be read by any general release paint package. There are commands within the library to cache these pictures and decompress to a bitmap only when you need them. Later versions will enable a coder to add his own personal tag so only he/she can decrypt the file.

Making a PCF Picture

-----

---

In order to turn a IFF ILBM picture into a PCF file one need only use the picture\_crunch program supplied in the archieve. Click on the "Load N Crunch" button to load an IFF and convert it to a PCF file. You will be asked if you wish to generate a V 1.0 file or the latest format. Please only select the "Latest Format" option as V1.0 is reserved for my use only and is protected and cannot be decrypted by any one else!

One can only use the Display gadgets once a IFF picture has been crunched, this is a bug that will be fixed in later versions. Sorry.

#### The Library

-----

The library can be installed either by copying "PCF\_Lib.obj" to your BlitzLibs:Userlibs directory and then selecting "RELOAD ALL LIBS" in the COMPILER menu in BB2, or by using the MakeDefLibs program after copying "PCF\_Lib.obj" to your BlitzLibs:Userlibs directory.

## 1.66 pcfindex

PCF Commands:

- CachePCF
- FreePCFCache
- LoadPCF
- UnpackPCF
- PCFDepth
- PCFHeight
- PCFInfo
- PCFVersion
- PCFWidth

Other info

## 1.67 pcf\_cachepcf

Function : CachePCF

-----

Modes: Amiga

Syntax: cache\_ptr.l=CachePCF (Filename\$,Memory Type,Cache Length)

The function loads a PCF file into memory, returning the pointer to the cache. The Cache Length variable will contain the length of the cache and is needed in order to use the FreePCFCache command. This command does not cause the PCF image to be displayed.

If anything goes wrong during the loading of the file, no memory will be allocated and 0 will be returned.

See Also: FreePCFCache , LoadPCF , UnpackPCF

## 1.68 pcf\_freepcfcache

Statement: FreePCFCache

---

Modes: Amiga/Blitz

Syntax: FreePCFCache cache\_ptr,cache\_length

Frees the memory used by the PCF cache.

See Also: CachePCF

## 1.69 pcf\_unpackpcf

Statement: UnpackPCF

---

Modes: Amiga/Blitz

Syntax: UnpackPCF Bitmap#,Palette#,cache\_ptr

Decompresses a PCF cache to a bitmap and palette. Both objects must already exist. The PCF library currently makes no attempt to check the bitmap or the palette are deep enough. If the bitmap is too large then the image WILL be corrupt. The statement checks the version of PCF Cache to ensure that it can decompress it!

See Also: CachePCF , LoadPCF

## 1.70 pcf\_loadpcf

Statement: LoadPCF

---

Modes: Amiga

Syntax: LoadPCF Bitmap#,Palette#,cache\_ptr

Loads and decompresses a PCF image straight into the bitmap and palette. The image is NOT cached afterwards. The same restriction apply to this command as to UnpackPCF

See Also: CachePCF , UnpackPCF

## 1.71 pcf\_pcfinfo

Statement: PCFInfo

---

Modes: Amiga/Blitz

Syntax: PCFInfo cache\_ptr

Enables the use of PCFWidth, PCFHeight, PCFDepth, PCFVersion. These commands will all return the relevant details about the cache pointed to by cache\_ptr. This allows a programmer to ensure that the destination

---

bitmap and palette are of the correct dimensions.

See Also: PCFWidth , PCFHeight , PCFDepth , PCFVersion

## 1.72 pcf\_pcfversion

Function: PCFVersion

---

Modes: Amiga/Blitz

Syntax: v.l=PCFVersion

Returns the version of the last cache interogated by PCFInfo.

## 1.73 pcf\_pcfwidth

Function: PCFWidth

---

Modes: Amiga/Blitz

Syntax: v.l=PCFWidth

Returns the width of the last cache interogated by PCFInfo.

## 1.74 pcf\_pcfheight

Function: PCFHeight

---

Modes: Amiga/Blitz

Syntax: v.l=PCFHeight

Returns the height of the last cache interogated by PCFInfo.

## 1.75 pcf\_pcfdepth

Function: PCFDepth

---

Modes: Amiga/Blitz

Syntax: v.l=PCFDepth

Returns the number of bitplanes of the last cache interogated by PCFInfo.

## 1.76 pcf\_other

## Performance

-----

The UnpackPCF command can decompress a 320x256 by 256 colour image in under 10/50 of a second. For an image of 5 bitplanes or lower, the command can often decompress in under a frame.

The PCF file format itself is usually about 1k smaller than the related IFF file. This ratio will be much improved in the next version.

## The Futre

-----

I have a HUGE list of things to do, I just really wanted to get this out to the general public so people can tell me what they think (wince). But futre enhancements will include...

- o A PackIFF type command
- o Improved Compression rate
- o Unique key for decompression
- o Multiple file types, including Shapes
- o Multiple files in one PCF file.

Any bugs etc please contact FUNdamental at

Nigel Hughes  
2 Slimmons Drive  
St. Albans  
Herts  
AL4 9AS

Until the 23rd Of June at nlh1@uk.ac.aber, and after that via Mike Richards at mhr@uk.ac.aber.

Right, it is 1:05 AM and I am going to bed...

Nigel Hughes.

Back to main

## 1.77 packmain

PACK Library v0.1

=====

By Stephen McNamara with a little help from Steve Matty  
(c)1994 Reflective Images

### PACK COMMANDS

This library contains commands for the unpacking of ILBM's (IFF pictures) and the grabbing of their palettes (CMAP chunks). Nearly all the commands in this library can be used as either STATEMENTS or

FUNCTIONS.

Usage is identical in both cases but if used as a function then the command will return:

FALSE for failure  
TRUE for success

Please feel free to criticise (or praise!) this library, send me anything you want to say about it at:

Stephen McNamara,  
17 Mayles Road,  
Southsea,  
Portsmouth,  
Hampshire,  
England.  
PO4 8NP.  
Telephone: (England) 0705 781507.

Or send us anything you've written.....

## 1.78 packindex

These are all the PACK library commands:

DeIce  
ILBMGrab  
ILBMPalette  
LoadIFF  
=LoadIFF  
UnpackIFF  
=ChunkHeader  
=DeIce  
=ILBMPalette  
=UnpackIFF

## 1.79 pack\_unpackiff

Statement/Function: UnpackIFF

-----  
Modes : Amiga/Blitz

Syntax: UnpackIFF address.l,bitmap#[,lines]  
suc=UnpackIFF (address.l,bitmap#[,lines])

This command is used to unpack an IFF picture file from memory onto a bitmap. Address.l should point to the START of the iff file header in memory (either CHIP or FAST mem can be used), bitmap should be the number of a previously initialised bitmap. The optional lines parameter allows you to specify the number of lines to unpack from the IFF file.

This command checks the size of the bitmap against the size of the IFF

---

before it unpacks the IFF onto it. Checks are made for width, height and depth of the bitmap and the IFF and the following is done:

(size=WIDTH, HEIGHT and DEPTH)

```

    BITMAP 'size' < IFF 'size' : unpack aborted
    BITMAP 'size' = IFF 'size' : pic is unpacked
    BITMAP 'size' > IFF 'size' : pic is unpacked

```

Extra aborts can be caused by:

- not using a previously installed bitmap
- given the optional lines parameter as 0 or less
- not giving ADDRESS.l as a pointer to a valid IFF ILBM header

When using the optional parameter, you should note that if you try to unpack more lines than the IFF has, the unpack routine will automatically stop at the last line of the IFF. It will not reject the UnpackIFF command.

NOTE: you should save your IFF pictures with the STENCIL OFF because at the moment this routine does not check to see if STENCIL data is present in the IFF file.

## 1.80 pack\_ilbmpalette

Statement/Function: ILBMPalette

---

Modes : Amiga/Blitz

Syntax: ILBMPalette address.l,palette#  
       suc=ILBMPalette (address.l,palette#)

This command is used to grab the palette from a IFF picture file held in memory (CHIP or FAST mem). Address.l should be given as the address of either an IFF file in memory or a CMAP chunk in memory. When you use the SAVE PALETTE command from inside an art program (e.g. DPaint) or from inside Blitz2, the program saves out a CMAP chunk which gives details about the palette. The CMAP chunk is also saved with IFF picture files to give the palette of the picture.

This command will look at the address you gave and try and find a CMAP chunk from the address given to address+5120. If it finds a chunk it will grab the palette into the given palette object. If the palette object already contains palette information then this information is deleted. This routine looks in the CMAP chunk and reserves the palette object to have the same number of colour entries.

This command will fail if it doesn't find a CMAP chunk.

## 1.81 pack\_ilbmgrab

---



Statment: ILBMGrab

---

Modes : Amiga/Blitz

Syntax: ILBMGrab address.l,bitmap#,palette#

This command lets you grab both the palette and the graphics from an IFF picture file with just one command. It returns to success parameter to say whether or not it succeeded in grabbing the data, so if you need to know if the grabbing was successful you'll have to use the separate commands for grabbing palettes and graphics.

NOTE: this command essentially just calls both UnpackIFF and ILBMPalette so everything said about these commands is relevent for ILBMGrab.

## 1.82 pack\_loadiff

Statment/Function: LoadIFF

---

Modes : Amiga

Syntax: LoadIFF filename\$,bitmap#[,palette#]

suc=LoadIFF (filename\$,bitmap#[,palette#])

This command is a direct replacement for Blitz2's LoadBitmap. It is a lot faster than Blitz's command since it loads the file into memory and then unpacks it from there. Thus you need to ensure that you have enough free memory to load the IFF into before trying to use this command.

This command is also more stable than Blitz's since it checks for the existence of the file before trying to load it in.

The optional parameter allows you to load in the palette of the IFF picture. Refer to UnpackIFF and ILBMPalette for more information about unpacking the graphics and grabbing the palettes.

IMPORTANT NOTE: to use this command you must have our FUNC library installed in your copy of Blitz2. Use of this command without this library will probably lead to a bad crash of your Amiga!

## 1.83 pack\_deice

Statement/Function: DeIce

---

Modes : Amiga

Syntax: DeIce source\_address,dest\_address

suc=DeIce (source\_address,dest\_address)

This is a command from my (Stephen McNamara) past. It is used to unpack data files packed by my favourite Atari ST packer -

---

PACK ICE v2.40. I've put it into Blitz because still have loads of files that I've packed with it. To use it, `source_address` should (obviously) contain the address of the data, `dest_address` should be where to unpack the data to. In the function form, this command returns either 0 for unpack failed or -1 for success.

Note: The size of the data unpacked is the long word at `source_address+8` (I think, or is it 4?) if anybody is interested.....

## 1.84 pack\_chunkheader

Function: `ChunkHeader`

-----  
Modes : Amiga

Syntax: `val.l=ChunkHeader (A$)`

This command was put in by me (Stephen McNamara) before I realised Blitz already had a command that does exactly the same. I've left it in just because I want to. It is useful when looking through IFF files for chunks (e.g. ILBM, CMAP, etc.) as it gives you a longword value to look for in memory to find the chunk. The string should be a four character string (e.g. CMAP), you'll be returned the longword value of the string. This command does the job of the following bit of Blitz2 code:

```
a$="CMAP"  
val.l=Peek.l(&a$)
```

## 1.85 gfxmain

GFX Library v0.1  
=====

By Stephen McNamara and Steve Matty  
(c)1994 Reflective Images

GFX Commands

This library contains commands for the control of palette objects inside Blitz2. These are just simple commands that allow either interrogation of the palette objects are modifications to the colour values contained in them. After changing the palette with these commands, you'll have to do either a `USE PALETTE` or `DISPLAYPALETTE` (whichever is applicable to what you're doing) to make the changes come into effect on your screen.

Please feel free to criticise (or praise!) this library, send me anything you want to say about it at:

SIS3149@SISVAX.PORT.AC.UK  
or  
SIS3147@SISVAX.PORT.AC.UK

---

Or send us anything you've written.....

## 1.86 gfxindex

These are all the GFX library commands:

```
AGAFillPalette
FillPalette
PalAdjust
PaletteInfo
=PalRed
=PalGreen
=PalBlue
=AGAPalRed
=AGAPalGreen
=AGAPalBlue
```

## 1.87 gfx\_paletteinfo

Statement: PaletteInfo

---

Modes : Amiga/Blitz

Syntax: PaletteInfo Palette#

This command is used to specify the palette object that all palette interrogations should look at. The majority of the commands use this palette object as the source for their data, e.g. PalRed(1) will look at the red value of colour 1 of the palette last used in a PaletteInfo command.

## 1.88 @{fg

---

Modes : Amiga/Blitz Syntax: r.w=PalRed (Colour#)

This command is used to get the red value of colour number Colour#. You should use the PaletteInfo command to specify what palette this command takes its information from.

The value returned will be from 0 to 15

## 1.89 gfx\_palgreen

Function: PalGreen

---

Modes : Amiga/Blitz

Syntax: r.w=PalGreen (Colour#)

---

This command is used to get the green value of colour number Colour#. You should use the PaletteInfo command to specify what palette this command takes its information from.

The value returned will be from 0 to 15

## 1.90 gfx\_palblue

Function: PalBlue

---

Modes : Amiga/Blitz

Syntax: b.w=PalBlue (Colour#)

This command is used to get the blue value of colour number Colour#. You should use the PaletteInfo command to specify what palette this command takes its information from.

The value returned will be from 0 to 15

## 1.91 gfx\_agapalred

Function: AGAPalRed

---

Modes : Amiga/Blitz

Syntax: r.w=AGAPalRed (Colour#)

This command is used to get the red value of colour number Colour#. You should use the PaletteInfo command to specify what palette this command takes its information from.

The value returned will be from 0 to 255, this number of shades, though, can only be displayed on an AGA machine.

## 1.92 gfx\_agapalgreen

Function: AGAPalGreen

---

Modes : Amiga/Blitz

Syntax: g.w=AGAPalGreen (Colour#)

This command is used to get the green value of colour number Colour#. You should use the PaletteInfo command to specify what palette this command takes its information from.

The value returned will be from 0 to 255, this number of shades, though, can only be displayed on an AGA machine.

---

## 1.93 gfx\_agapalblue

Function: AGAPalBlue

---

Modes : Amiga/Blitz

Syntax: b.w=AGAPalBlue (Colour#)

This command is used to get the blue value of colour number Colour#. You should use the PaletteInfo command to specify what palette this command takes its information from.

The value returned will be from 0 to 255, this number of shades, though, can only be displayed on an AGA machine.

## 1.94 gfx\_paladjust

Statement: PalAdjust

---

Modes : Amiga/Blitz

Syntax: PalAdjust dest\_palette#,ration.q[,start\_col,end\_col]

This command is used to multiple all the colours, or a range of colours, in a palette object, by a ratio. The dest\_palette# argument is used to give a destination for the adjusted colour information. This destination should be a pre-reserved palette and should be AT LEAST as big and the source palette. The source palette is taken as being the palette last used in the PaletteInfo command.

The ratio should be given as either a quick value or a float and should be below one for a fade or above to lighten a palette. If you give a ratio of 1 then a palette copy will occur.

The optional start and end parameters let you specify the range of colours to adjust. Only this range of colours, though, will be adjusted and stored in the destination palette.

## 1.95 gfx\_fillpalette

Statement: FillPalette

---

Modes : Amiga/Blitz

Syntax: FillPalette palette#,r,g,b[start\_col,end\_col]

This command lets you fill a given palette object with specific r,g,b values. The values given should be between 0 to and 15. Optionally, you can give start and end colour numbers to set a range for the fill. You should be careful, though, because when you specify a range, no checking is done (at the moment) to make sure that you don't exceed the colour limit of the palette.

You should note that this command does not work on the palette last PaletteInfo'ed.

---

## 1.96 gfx\_agafillpalette

Statement: AGAFillPalette

-----

Modes : Amiga/Blitz

Syntax: AGAFillPalette palette#,r,g,b[start\_col,end\_col]

This command is identical to FillPalette except that it lets you specify AGA shade values for the r,g,b parameters.

See FillPalette for more information.

## 1.97 fnsmain

FNS Library v0.992  
=====

By Stephen McNamara  
(c)1994 Reflective Images

### FNS COMMANDS

This Blitz2 library prints proportional fonts in either Amiga or Blitz mode. It uses my own (rather primitive) font file format, details of which can be found at the end of this text file. Fonts can be upto 64 pixels wide and any height (although the font editor is limited to 64 pixels at the present moment). Fonts can be output in upto 256 colours (AGA!) and in the following ways: bold, centred, underlined, right-aligned or just standard left-aligned.

Note: a default font (PERSONAL.8) is built into this library and can be used by simply using font number 0. You do not have to install this font, it is automatically available for your use. A second point is to make is that the library is set up with a clipping rectangle of 0,0 to 0,0. Thus you have to use either FNSClip, FNSClipOutput or FNSOutput (with the optional clip parameter) to set the clipping rectangle before you try to print anything.

Please feel free to criticise (or praise!) this library, send me anything you want to say about it at:

SIS3149@SISVAX.SIS.PORT.AC.UK

Or send me anything you've written.....

## 1.98 fnsindex

These are all the FNS library commands:

|            |            |
|------------|------------|
| InstallFNS | =FNSHeight |
| RemoveFNS  | =FNSLength |

---

|               |               |
|---------------|---------------|
| FNSClip       | =FNSLoad      |
| FNSClipOutput | =FNSSlot      |
| FNSSetTab     | =FNSUnderline |
| FNSInk        | =FNSVersion   |
| FNSOrigin     | =FNSWidth     |
| FNSOutput     | FNSPrefs      |
| FNSPrint      | FNSUnLoad     |

FNS font format

Note: All return values will be words except when using InstallFNS and FNSVersion.

## 1.99 fns\_format

FNS Font file format:

=====

Header: 256 bytes.

```

0-3   : 'FNS.' - file identifier - looked for by InstallFNS
4-5   : height of font (#word)
6-7   : width of font in multiples of 16 (#word)
8-9   : underline position (offset from top of font, #word)
10-11 : size of data for each font character
      [ (WIDTH/8) * height ]
32-255: byte giving widths of each character in the font.
      These bytes doesn't really hold the width, rather
      they hold the value to add to the X position of the
      character to get to the position to print the next
      character at (!).
```

256-EOF:character data starting at ASCII 32 (space)

## 1.100 fns\_settab

Statement: FNSSetTab

-----

Modes : Amiga/Blitz

Syntax: FNSSetTab tab\_width

Description:

Use this command to set the tab spacing used when printing. The value given should be the spacing IN pixels.

## 1.101 fns\_load

Function: FNSLoad

-----

Modes : Amiga/Blitz

Syntax: suc=FNSLoad (filename\$,font#)

Description:

This command is used to load a font from disk and automatically install it for use by the FNS commands. Filename\$ should be the full name of the file to load (path\$+file\$) and font# should be 0<= and >=15. This command returns a value of -1 for failure or the font number the font was installed as (see InstallFNS). A failure could either be a load error or an installation error.

You should make sure that the file you load IS an FNS font file.

IMPORTANT NOTE: to use this command, you must have our FUNC library installed on your copy of Blitz2. Running it without this library could, and probably will, cause a major crash of your computer.

Also note that if you do an ERASEALL (this is a FUNC library command for erasing banks), you will DELETE your font from memory!

## 1.102 fns\_unload

Statement: FNSUnLoad

---

Modes : Amiga/Blitz

Syntax: FNSUnLoad font#

This command is used to remove a font installed with the FNSLoad command. When this command runs it automatically removes the font entry in the FNS commands and deletes the memory that the font file is held in. There is no need to do this at the end of a program as the FUNC library automatically frees up all allocated memory.

## 1.103 fns\_slot

Function: FNSSlot

---

Modes : Amiga/Blitz

Syntax: address.l=FNSSlot

Steve: this command was not in the doc file.

## 1.104 fns\_installfns

Function: InstallFNS

---

Modes : Amiga/Blitz

Syntax: font\_num.b=InstallFNS(font\_num.b,address.l)

---



This is used to install a font so that it is available for use by the output routines. Font\_num should be a number  $\geq 0$  and  $\leq 15$ , address should be the address in memory of the FNS font file. This function will check that the address given does contain a FNS font (it will look for the header 'FNS.'), if it cannot find the font or something else goes wrong it will return a 0 to you, otherwise it will return the number the font was installed as.

Note: The font number you give is automatically ANDED with \$F when you call this function, thus if you supply a number greater than 15 you could actually overwrite a previously installed font.

See: RemoveFNS

## 1.105 fns\_removefns

Statement: RemoveFNS

---

Modes : Amiga/Blitz

Syntax: RemoveFNS font#

This command simply removes an installed font from the list of font held internally by the FNS routines. There is no real need to remove fonts as installing fonts takes up no memory, except of course the actual font data. You do not need to remove FNS fonts before ending a program.

See: InstallFNS

## 1.106 fns\_print

Statement: FNSPrint

---

Modes : Amiga/Blitz

Syntax: FNSPrint font\_num.b,x.w,y.w,a\$/string\_address  
[,preferences,colour]

This command prints the string a\$ in an FNS font at the position X,Y. Font\_num is the number of a previously installed FNS font, the output of this command is sent to the current FNS bitmap (see FNSOutput). You can setting a drawing rectangle on the currently used bitmap to limit the output of the font - see FNSClip for more info.

Instead of a string, though, you can give the address of a null terminated string in memory. Also, you can change the colour that text is being output in in the current string by putting the character ASCII 1 followed by a byte value from 0-255 specifying the colour to change to.

The optional parameters are for controlling how the text is output. They automatically override the default setting but are not permanent, i.e. the default output style and colour are restored after the line has been output. Use FNSInk and FNSPrefs to set the default font

---

output mode.

See: FNSOutput , FNSInk , FNSPrefs , FNSOrigin , FNSClip

## 1.107 fns\_output

Statement: FNSOutput

---

Modes : Amiga/Blitz

Syntax: FNSOutput bitmap#[,clip\_update]

This command selects a bitmap for use by the FNS routines, the bitmap must be a previously reserved Blitz 2 bitmap object. After this command all FNS font printing will occur on the selected bitmap. The optional parameter allows you to update the clipping rectangle for output at the same time as setting the output bitmap. Setting clip\_update to a non-zero value will cause the clipping area to automatically be set to the dimensions of the selected bitmap.

NOTE:

-----  
This command MUST be used before you attempt to use FNSPrint. The maximum depth of the bitmap for printing is 8 bitplanes since this is all Blitz 2 currently supports.

See: FNSClip , FNSClipOutput

## 1.108 fns\_ink

Statement: FNSInk

---

Modes : Amiga/Blitz

Syntax: FNSInk colour#

This sets the output colour for the FNS font drawing routines. The number range is dependant on the depth of the destination bitmap, the max possible range, though, is limited to 0 to 255 colours. The FNS output routines will attempt to draw in all the bitplanes of the selected bitmap, any extra bits in the ink colour will be ignored.

See: FNSPrefs

## 1.109 fns\_prefs

Statement: FNSPrefs

---

Modes : Amiga/Blitz

Syntax: FNSInk preferences[,colour#]

This sets the output prefs for the FNS font drawing routines but at

---

the same time also sets the colour for the FNS routines (optional). At the moment the following options are available, the bits of the preferences byte are used to select the different options:

bit 0: Centred text  
bit 1: Bold text  
bit 2: Underline  
bit 3: Right aligned

See: FNSInk , FNSPrint , FNSLength

### 1.110 fns\_height

Function: FNSHeight

---

Modes : Amiga/Blitz

Syntax: height.w=FNSHeight(font\_num)

This routine returns the height of a previously installed FNS font. Font\_num should be >=0 and <=15.

See: FNSUnderline , FNSWidth

### 1.111 fns\_underline

Function: FNSUnderline

---

Modes : Amiga/Blitz

Syntax: under\_pos=FNSUnderline(font\_num)

This routine returns the underline position of the selected FNS font. Font\_num should be >=0 and <=15.

See: FNSHeight , FNSWidth

### 1.112 fns\_width

Function: FNSWidth

---

Modes : Amiga/Blitz

Syntax: width.w=FNSWidth(font\_num)

This routine returns the width in multiples of 16 of the selected FNS font. Font\_num should be >=0 and <=15.

See: FNSHeight , FNSUnderline

---

### 1.113 fns\_clip

Statement: FNSClip

---

Modes : Amiga/Blitz

Syntax: FNSClip x1,y1,x2,y2

This command is used to limit the output of the FNSPrint command. The co-ordinates given should describe a rectangle that is to be used to clip the output. This rectangle can be thought of as a window on the bitmap - no printing can occur outside of the window.

X1,Y1 are the top left corner of the clipping rectangle and X2,Y2 are the bottom right corner. Please note that both X co-ordinates should be multiples of 16 and that X2 should be the heightest multiple of 16 that you do not wish output to occur at. Thus if your bitmap is 320x256 then you would use the following to set the clipping rectangle to the full bitmap:

```
FNSClip 0,0,320,256
```

See: FNSClipOutput , FNSOutput

### 1.114 fns\_clipoutput

Statement: FNSClipOutput

---

Modes : Amiga/Blitz

Syntax: FNSClipOutput

This command is used to quickly set the clipping rectangle for the FNS commands to the full size of a bitmap.

See: FNSClip , FNSOutput

### 1.115 fns\_origin

Statement: FNSOrigin

---

Modes : Amiga/Blitz

Syntax: FNSOrigin [x,y]

This command is used to set an origin co-ordinate for printing output. Whenever you use FNSPrint, the origin co-ordinates are added (as words) to the co-ordinates you give for output. I.e. setting the origin at 100,0 and printing at co-ordinates 0,0 will cause the output to be at 100,0.

Using this command without any parameters will cause the origin to be reset to the position 0,0.

Note: This command does not affect the use of the FNSClip command.

---

## 1.116 fns\_lenght

Function: FNSLength

Modes : Amiga/Blitz

Syntax: a=FNSLength (font#,a\$[,prefs])

This command is equivalent of the basic command a=len(a\$) except that it returns the x size, in pixels, of the string if it were to be printed in the font font#. The optional preferences parameter allows you to adjust the output of the string, if you specify no preferences then this function will use the previously selected preferences to calculate the string length. Using preferences allows you to account for things like bold text output.

See: FNSPrefs

## 1.117 fns\_version

Function: FNSVersion

Modes : Amiga/Blitz

Syntax: a.q=FNSVersion

This command allows you to test the version number of the FNS library that your program is being compiled with. It returns a quick float value and so you should use a quick float variable for the answer. This doc file was written for version 0.991 of the library.

FNS Font file format:

=====

Header: 256 bytes.

0-3 : 'FNS.' - file identifier - looked for by InstallFNS

4-5 : height of font (#word)

6-7 : width of font in multiples of 16 (#word)

8-9 : underline position (offset from top of font, #word)

10-11 : size of data for each font character

[ (WIDTH/8) \* height ]

32-255: byte giving widths of each character in the font.

These bytes doesn't really hold the width, rather they hold the value to add to the X position of the character to get to the position to print the next character at (!).

256-EOF:character data starting at ASCII 32 (space)

## 1.118 funcmain

Func/AMOS Library v1.0

=====

By Steven Matty  
©1994 Reflective Images

## FUNC COMMANDS

This library was written primarily to emulate the functions that were present in AM\*S but not in Blitz Basic 2. It began life as a load of Blitz Statements but was then converted to high speed 680x0. The library will continually be expanded upon and free updates will be sent on request. If you decide to use any of the function please give me a little cred, not a lot, just something. Anyway, enough of this baloney....on with the command list.

### 1.119 funcindex

These are all the FUNC library commands:

|            |               |
|------------|---------------|
| CacheOff   | =KeyCode      |
| CopyByte   | =Length       |
| CopyWord   | =Lisa         |
| CopyLong   | =MakeDir      |
| Erase      | =Max          |
| EraseAll   | =MemFree      |
| FillMem    | =Min          |
| NextBank   | =PLoad        |
| Reboot     | =Rename       |
| ResetTimer | =Reserve      |
| =BLoad     | =CludgeShapes |
| =BSave     | =CludgeSound  |
| =FileSize  | =Start        |
| =XOR       | =Timer        |

```
***** NOTE *****
* VALID BANKS RANGE FROM 0-49 INCLUSIVE. DO NOT USE A VALUE GREATER THAN 49 *
* OR IT WILL BE INTERPRETED AS AN ADDRESS RATHER THAN A BANKNUMBER          *
*****
```

### 1.120 func\_resettimer

Statement: ResetTimer

Mode : Amiga/Blitz

Syntax : ResetTimer

This will recent the CIA timer to 0.

### 1.121 func\_cludgeshapes

Statement/Function : CludgeShapes

---

Mode : Amiga/Blitz

Syntax : [success]=CludgeShapes(shape#,numshapes,address)

This allows the creation of shapes through INCBIN statements. It allocates chip memory for each shape and copies the data into this. It does the same as LoadShapes except it grabs shapes from memory.

### 1.122 func\_cludgesound

Statement/Function : CludgeSound

---

Mode : Amiga/Blitz

Syntax : [success]=CludgeSound(sound#,address)

This does that same for CludgeShapes but works on only 1 sound at a time

NOTE: Looped sounds are not currently supported! The sound must be a valid 8SVX sample.

### 1.123 func\_reserve

Function: Reserve

---

Mode : Amiga/Blitz

Syntax : success=Reserve(banknumber,length)

This will attempt to reserve <length> bytes of memory. If succesfull, it will return the address of the bank. If unsuccessful, 0 is returned. Banks are limited by the Compiler Options Menu.

### 1.124 func\_erase

Statement: Erase

---

Mode : Amiga/Blitz

Syntax : Erase(banknumber)

The Erase command will erase the specified memory bank.

### 1.125 func\_eraseall

Statement: EraseAll

---

Mode : Amiga/Blitz  
Syntax : EraseAll

This command will erase ALL allocated memory banks.

## 1.126 func\_bload

Function: BLoad

---

Mode : Amiga  
Syntax : success=BLoad(filename\$,bank/address[,length,offset])

If bank is specified, then the file is loaded into that bank. If address is specified then it is loaded to the address. Valid banks are 0-49. If the bank does not exist, Blitz will reserve a bank for you. If the bank does exist, Blitz will erase the bank from memory, and allocate a new one.

The return result is -1 for success, or 0 for failure (not enough RAM, file not exist). If offset is specified, then <length> bytes will be read from the specified offset position in the file.

## 1.127 func\_pload

Function: PLoad

---

Mode : Amiga  
Syntax : success=PLoad(filename\$,bank/address)

This will attempt to load the executable file to the specified address. -1 is success, 0 is failure.

## 1.128 func\_bsave

Function: BSave

---

Mode : Amiga  
Syntax : success=BSave(filename\$,bank/address,length)

This will save <length> bytes at bank/address to the file. Return result is -1 for success, 0 for failure. If length > bank length then the length of the bank is saved instead. If 0 is specified, the entire bank is saved.

---



### 1.129 func\_start

Function: Start

---

Mode : Amiga/Blitz

Syntax : start\_address.l=Start(banknumber.b)

This will return the start address of the specified bank. (0=no bank)

### 1.130 func\_length

Function: Length

---

Mode : Amiga/Blitz

Syntax : length\_of\_bank.l=Length(banknumber.b)

This will return the length of the specified bank in bytes. (0=No bank)

### 1.131 func\_memfree

Function: MemFree

---

Mode : Amiga/Blitz

Syntax : bytes.l=MemFree

This will return the total amount of Public Free RAM available to the system.

### 1.132 func\_nextbank

Function: NextBank

---

Mode : Amiga/Blitz

Syntax : bank.b=NextBank

This will return the number of the first available bank (-1 if none free).

### 1.133 func\_fillmem

Statement: FillMem

---

Mode : Amiga/Blitz

Syntax : FillMem(address.l,length.l,value.b)

This will fill 'length' bytes starting from the specified address with 'value'.

---

### 1.134 func\_copybyte

Statement: CopyByte

---

Mode : Amiga/Blitz

Syntax : CopyByte(source.l,dest.l,num.l)

This will copy <num> bytes from <source> to <dest>

### 1.135 func\_copyword

Statement: CopyWord

---

Mode : Amiga/Blitz

Syntax : CopyByte(source.l,dest.l,num.l)

This will copy <num> words from <source> to <dest>

### 1.136 func\_copylong

Statement: CopyLong

---

Mode : Amiga/Blitz

Syntax : CopyByte(source.l,dest.l,num.l)

This will copy <num> longwords from <source> to <dest>

### 1.137 func\_makedir

Function: MakeDir

---

Mode : Amiga

Syntax : success=MakeDir(name\$)

This function attempts to create a directory called <name\$>  
If it is unsuccessful, 0 is returned else -1 is returned.

### 1.138 func\_rename

Function: Rename

---

Mode : Amiga

Syntax : success=Rename(source\$,dest\$)

This attempts to rename the file <source\$> to <dest\$>

NOTE: It is not possible to rename across devices. -1 is returned if  
successfull, else 0.

---

### 1.139 func\_timer

Function: Timer

---

Mode : Amiga/Blitz

Syntax : t.l=Timer

This will return the number of 50ths of a second since startup.

### 1.140 func\_lisa

Function: Lisa

---

Mode : Amiga/Blitz

Syntax : chipver=Lisa

This will return the current Lisa chip version :

\$00 for OCS Denise

\$F7 for ECS Denise

\$F8 for AGA Lisa

### 1.141 func\_reboot

Statement: Reboot

---

Mode : Amiga/Blitz

Syntax : Reboot

This will perform a cold reboot

### 1.142 func\_filesize

Function: FileSize

---

Mode : Amiga

Syntax : size.l=FileSize(filename\$)

This return the length (in bytes) of the file.

### 1.143 func\_cacheoff

Statement: CacheOff

---

Mode : Amiga/Blitz

Syntax : Cache Off

This will turn off the instruction cache of the CPU.

---

## 1.144 func\_xor

Function: XOR

---

Mode : Amiga/Blitz  
 Syntax : x.l=XOR(x.l,y.l)

This will perform an Exclusive-Or operation between X and Y and put the result back into X  
 e.g

```
x=XOR(%101,%100)
```

Will place %001 into X (%101 XOR %100 = %001)

## 1.145 func\_max

Function: Max/Min

---

Mode : Amiga/Blitz  
 Syntax : value=Max(first\_var,second\_var)  
          value=Min(first\_var,second\_var)

This will compare both values and return either the Higher of the values (Max) or the Lower (Min). This currently supports INTEGERS only.

## 1.146 func\_keycode

Function: KeyCode

---

Mode : Amiga/Blitz  
 Syntax : keycode=KeyCode

This will return the status of the keyboard in the form of a keycode. You will need to experiment to find out the desired keycode for a particular key.

This merely peeks address \$bfec01 and returns the value found.

## 1.147 fxmain

Reflective Images Effects Library  
 =====

By Stephen McNamara, with help from Steve Matty  
 (c)1994 Reflective Images  
 FX COMMANDS

Note: The library has had a lot of the commands inside it expanded so

---

that they work on any size bitmap. At the moment the following, though, will only work on lo rez bitmaps: ZoomX8, Derez and ZoomXY

None of the commands in this library use the blitter chip, any blitter source code that anybody has please send to me.

## 1.148 fxindex

Here are all the FX commands:

Command list:

```
ChunkyToPlanar (Slow)
ClearBitmap
Derez
FadeInBitmap
InitZoomXY
PlanarToChunky (Slow)
ReduceX2
ZoomXY
ZoomX2
ZoomX4
ZoomX8
=ADDValue(bitmap#,x,y)
```

No instructions for the planar<>chunky commands since their not really that useful at the moment. If anybody has some working code thats good then.....

## 1.149 fx\_planar

No instructions for the planar<>chunky commands since their not really that useful at the moment. What I'm going to try and do is put some faster conversion routines in this library to do the jobs of these commands.

## 1.150 fx\_fadeinbm

Statement: FadeInBitmap

Modes : Amiga/Blitz

Syntax: FadeInBitmap source#,dest#,delay[,offset1,offset2,height]

This is used to make a low rez, any height, bitmap appear on another one in a nice way. Source# and dest# should be bitmap object numbers and delay is the 'slow-down' value for the fade. This is necessary because this routine works very fast - at full speed it looks just like a slow screen copy. You should note that the delay is taken as being a word, thus don't pass 0 or you'll actually get a delay of 65535. This routine will adjust itself to take into account the depth of the bitmap,

WARNING: the depth of the destination bitmap should be AT LEAST as big as the depth of the source# bitmap because the depth of the fade is taken from the source# bitmap.

The optional parameters in this command allow you to set respectively: the source bitmap y offset, the destination bitmap y offset and the height of the fade (in pixels). If these parameters are left out then the fade automatically occurs across the full size of the bitmap.

See: ClearBitmap

## 1.151 fx\_clearbm

Statement: ClearBitmap

---

Modes : Amiga/Blitz

Syntax: ClearBitmap source#,delay[,offset,height]

This is used to clear a low res, any height, bitmap in a very pleasant way. The parameters are the same as for FadeInBitmap except that only one bitmap is needed. The delay parameter is used for the same reason as in FadeInBitmap - to slow down the effect. The optional parameters allow you to set a y start value for the clear and the height (in pixels) of the clear.

See: FadeInBitmap

## 1.152 fx\_zoom2

Statement: ZoomX2

---

Modes : Amiga/Blitz

Syntax: ZoomX2 source#,dest#,add\_source,add\_dest,width,height

This command does a very fast X2 zoom. It works with two bitmaps - one source and one dest (note: these can be the same bitmap but you should be careful that the zoom is not done over the source data). The two parameters add\_source and add\_dest allow you to specify the position of the start of the zoom, they specified as byte offsets from the top left corner of the bitmaps (byte 0). These values can be calculated by the following method:

$$\text{add\_source} = (Y \times \text{BITMAP\_WIDTH (in bytes)} + (X / 8))$$

or by using the built in command ADDValue. Width and height are both specified in pixels.

NOTE: There is no clipping on this command - be careful not to zoom off the edges of bitmaps. you can zoom from a bitmap to a different size bitmap BUT the destination bitmap must be as deep as the source and big enough to hold the zoomed data.

---

See: ZoomX4 , ZoomX8 , ADDValue

### 1.153 fx\_zoom4

Statement: ZoomX4

---

Modes : Amiga/Blitz

Syntax: ZoomX4 source#,dest#,add\_source,add\_dest,width,height

This is exactly the same as ZoomX2 except that a times 4 zoom is done by this command.

Note: You can zoom from a bitmap to a different size bitmap BUT the destination bitmap must be as deep as the source and big enough to hold the zoomed data.

See: ZoomX2 , ADDValue

### 1.154 fx\_zoom8

Statement: ZoomX8

---

Modes : Amiga/Blitz

Syntax: ZoomX8 source#,dest#,add\_source,add\_dest,width,height

This is exactly the same as ZoomX2 except that a times 8 zoom is done by this command

See: ZoomX2 , ADDValue

### 1.155 fx\_addvalue

Function: ADDValue

---

Modes : Amiga/Blitz

Syntax: addval.w=ADDValue(bitmap#,x,y)

This function can be used to calculate the add\_source and add\_dest values used in all the zoom commands. Just give the bitmap number, x co-ordinate and the y co-ordinate and you'll get an answer back that can be used straight in the ZoomXn commands.

See: ZoomX2, ZoomX4 , ZoomX8 , ZoomXY

### 1.156 fx\_initzoomxy

Statement: InitZoomXY

---

Modes : Amiga/Blitz

Syntax: InitZoomXY source#,dest#,add\_source,add\_dest

This command initialises the ZoomXY routine to the bitmaps you want it to work on. You MUST use this routine before calling ZoomXY. The parameters are the same as the first four parameter for the ZoomXn commands - source and dest bitmaps and add\_source/dest values.

See: ZoomXY

## 1.157 fx\_zoomxy

Statement: ZoomXY

---

Modes : Amiga/Blitz

Syntax: ZoomXY xzoom\_value,yzoom\_value,height

This command does a zoom based on the values you give it. You should note, though, that zoom values should be integer values (no fractional part). The height is the height in pixels that the source data should be zomed to. Please note that this command is different to the other zoom commands in that the output of it is clipped to fit inside 320 pixels.

This command should only be used after InitZoomXY has been called. This routine has an extra feature in that if you give both zoom values as 1 then a bitmap copy is done from the source to the dest using the offsets given and the height.

See: InitZoomXY

## 1.158 fx\_derez

Statement: Derez

---

Modes : Amiga/Blitz

Syntax: Derez source#,dest#,add\_source,add\_dest,derez\_value,height

This command is used to derez a low resolution bitmap onto another one. The bitmaps are source# and dest#, add\_source and add\_dest are used to control the start position of the derez (see ZoomX2 and ADDValue to see how these are calculated). The derez value is obviously the amount that each pixel will be derezed to in both the x and y directions, the height is the height of the derez - the derez is clipped to fit inside this in the y direction and inside 320 pixels in the x direction.

This routine has an extra feature in that if you give derez\_value as 1 then a bitmap copy is done from the source to the dest using the offsets given and the height.

---



## 1.159 fx\_reducex2

Statement: ReduceX2

---

Modes : Amiga/Blitz

Syntax: ReduceX2 source#,dest#,add\_source,add\_dest,width,height

Description:

This command halves the given rectangle of one bitmap and pastes it onto the destination bitmap. Width should be a multiple of 16, width and height should describe a rectangular area that will be reduced (these values should be in pixels).

See ZoomX2 and other commands for more information about the syntax of this command.

## 1.160 zj\_main

Reflective Images Zone-Joystick Library v1.2

=====

By Stephen McNamara, original Joy Library by Steve Matty  
(c)1994 Reflective Images

This library contains commands for setting up zones and testing the status of the joysticks attached to the Amiga.

ZONE-JOY COMMANDS

## 1.161 zonejoymain

Zone-Joy commands:

Command list:

- FreeZoneTable
- NewZoneTable
- Setzone
- UseZoneTable
- ZoneInit
- =AllFire
- =JFire
- =JHoriz
- =JVert
- =ZoneTableSize
- =Zone
- =ZoneTest
- =ZoneTable

## 1.162 zj\_ztsize

---

Function: ZoneTableSize

---

Modes : Amiga/Blitz  
Syntax : size.l=ZoneTableSize

This function returns the size, in zones, of the current zonetable. It is equivalent of doing: size.l=peek.l(ZoneTable).

### 1.163 zj\_uztable

Statement/Function: UseZoneTable

---

Modes : Amiga/Blitz  
Syntax : UseZoneTable table#

This command is used to change the current zonetable to the selected one. If used as a function, it will return TRUE for success or FALSE for failure.

Valid zonetable numbers range from 0 to 15.

### 1.164 zj\_nztable

Statement/Function: NewZoneTable

---

Modes : Amiga/Blitz  
Syntax : NewZoneTable table#,size

This command will attempt to allocate a new zonetable with the given table number. If the table already exists it will be deleted. The maximum size for a zonetable is 65536 zones. If used as a function, this command will return FALSE for failure or TRUE for success. You should note that all zones are automatically reset in the new table and that creating a table does not make it the current table, this must be done with UseZoneTable.

Valid zonetable numbers range from 0 to 15.

IMPORTANT NOTE: you cannot define the size of zonetable 0. You cannot use this command to alter it in any way.

### 1.165 zj\_fztable

Statement/Function: FreeZoneTable

---

Modes : Amiga/Blitz  
Syntax : FreeZoneTable table#

This command is used to free a zonetable from memory. If used as a

---

function, it will return TRUE or FALSE. When successfully called, this command will free the zonetable and change the currently used zonetable to table number 0.

Valid zonetable numbers range from 0 to 15.

IMPORTANT NOTE: you cannot free zone table 0.

## 1.166 zj\_ztable

Function: ZoneTable

---

Modes : Amiga/Blitz

Syntax : ad.l=ZoneTable

This function returns the address in memory of the zone information storage area for the current zonetable. The zones are stored one after the other, with each zone taking up 8 words (16 bytes) in the data area, making a total size of 2048 bytes. They are stored in the following way:

Rectangular: +0: x1  
+2: y1  
+4: x2  
+6: y2

Circular: +0: x1  
+2: y1  
+4: radius of zone  
+6: -1 <-- this is set to show that the  
zone is circular.

Undefined zone: +0: -1  
+2: -1  
+4: -1  
+6: -1

The first longword (4 bytes) of the zonetable is used to hold the size, in zones, of the table (thus the true size of the zonetable is 4+number of zones\*8).

## 1.167 zj\_zoneinit

Statement: ZoneInit

---

Modes : Amiga/Blitz

Syntax : ZoneInit [zone\_num] |[start\_zone,end\_zone]

This command is used to clear any zones currently set. The optional parameters allow you to select either a single zone or a range of zones to reset.

---

## 1.168 zj\_setzone

Statement: Setzone

---

Modes : Amiga/Blitz

Syntax : Setzone zone#,x1,y1,radius  
Setzone zone#,x1,y1,x2,y2

This command lets you set up zones for testing. The first version is used when you want to set up a circular zone and the second when you want a rectangular one. With rectangular zones, x1,y1 should be the top left corner of the rectangle and x2,y2 should be the bottom left.

Note: The max zone number is 255.

When you use this command, the zone number you give is ANDed with 256 so you should ensure that you give a number lower than 256 so that previously defined zones don't get corrupted.

Zones can be defined in any order.

Circular zones are used in exactly the same way as rectangular ones.

## 1.169 zj\_zone

Function: Zone

---

Modes : Amiga/Blitz

Syntax : a.w=Zone(x,y)

This command takes the co-ordinates x,y and checks to see if they are inside any of the defined zones. The zones are searched in order, starting at 0 and going through to 255. This command will return the first zone that the co-ordinates were found to be inside, you should note that both types of zones are tested (rectangular and circular).

This command returns either -1 for not inside a zone or the zone number.

## 1.170 zj\_zonetest

Function: ZoneTest

---

Modes : Amiga/Blitz

Syntax : a.w=ZoneTest(start\_num[,end\_num],x,y)

This command is the same as the Zone command except that it allows you to select either one individual zone to test or a range of zones. You should, though, ensure that end\_num is greater than start\_num.

This command returns either -1 for not inside a zone or the zone number.

---

## 1.171 zj\_zonetable

Function: ZoneTable

---

Modes : Amiga/Blitz

Syntax : ad.l=ZoneTable

This function returns the address in memory of the zone information storage area. The zones are stored one after the other, with each zone taking up 8 words (16 bytes) in the data area, making a total size of 2048 bytes. They are stored in the following way:

Rectangular: +0: x1  
+2: y1  
+4: x2  
+6: y2

Circular: +0: x1  
+2: y1  
+4: radius of zone  
+6: -1 <-- this is set to show that the  
zone is circular.

Undefined zone: +0: -1  
+2: -1  
+4: -1  
+6: -1

## 1.172 zj\_jfire

Function: JFire

---

Modes : Amiga/Blitz

Syntax : jf.b=JFire(joy#)

This command tests the fire button status of the joystick joy#, where joy# is between 1 and 4. You should note that, as with all the joystick commands, joy#=1 refers to the Amiga's joystick port, joy#=2 refers to the mouse port, and joy#=3 or joy#=4 refer to the four player adapter ports.

This command returns 0 for fire button not pressed or -1 for pressed

## 1.173 zj\_jhoriz

Function: JHoriz

---

Modes : Amiga/Blitz

Syntax : jh.b=JHoriz(joy#)

This command is used to test the horizontal direction of the selected joystick. It returns:

---

0: No horizontal direction  
-1: Joystick left  
1: Joystick right

### 1.174 zj\_jvert

Function: JVert

---

Modes : Amiga/Blitz  
Syntax : jv.b=JVert(joy#)

This command is used to test the vertical direction of the selected joystick. It returns:

0: No vertical direction  
-1: Joystick up  
1: Joystick down

### 1.175 zj\_allfire

Function: AllFire

---

Modes : Amiga/Blitz  
Syntax : af.b=AllFire [(bit\_pattern)]

This command is used to test the fire button status of all four joysticks. It returns a byte with the first four bits giving the joystick status, false=fire button not pressed, true=fire button pressed. The following bits belong to joysticks:

bit 0: joystick 1 (joystick port)  
bit 1: joystick 2 (mouse port)  
bit 2: joystick 3 (four player adaptor)  
bit 3: joystick 4 (four player adaptor)

The optional bit pattern can be used to restrict the testing of the fire buttons. If a bit in the pattern is clear (false) then the joystick it belongs to will not have its fire button tested,

e.g. AllFire (%0011) will test joysticks 1 and 2 and return the result. It will return false for joysticks 3 and 4.

### 1.176 ciatrackermain

Library: neilscitrackerlib #56

---

Author: Neil O'Rourke, 6 Victoria St, TAMWORTH, NSW 2340, AUSTRALIA

Overview:

---

Many thanks to Neil, from what I have seen on the net there are already many BlitzUsers using this library to great success. I'm trying to fit the example code on the disk as I type...

Quick Usage

Author's Doc

The CIA Tracker commands:

|                         |                      |
|-------------------------|----------------------|
| BuildNoteTable          | GetSongPosition      |
| CheckTrackerEvent       | GetTrackerEvent      |
| CheckTrackerModuleID    | GetTrackerInstrument |
| FreeTrackerModule       | GetTrackerLocation   |
| GetPatternPosition      | GetTrackerName       |
| GetSampleLength         | GetTrackerNote       |
| GetSampleLocation       | GetTrackerNoteNumber |
| GetSampleName           | GetTrackerSize       |
| GetSongLength           | GetTrackerVolume     |
| InitTracker             | SetTrackerModule     |
| LoadTrackerModule       | SetTrackerTempo      |
| OldGetTrackerNoteNumber | StartTracker         |
| PauseTracker            | StartTrackerPatPos   |
| PlayTrackerSample       | StopTracker          |
| RestartTracker          | WaitTrackerEvent     |
| SetDMAWait              |                      |
| SetSongPatternPosition  |                      |
| SetTrackerMask          |                      |

Notes:

~~~~~

Quite a number of these commands extract their data from the playroutine in real time; that is, around fifty times a second (depending upon the tempo). Therefore, the value your program receives could well be very different from what is actually happening in the song.

Disclaimer:

~~~~~

By installing this software on your system, you are agreeing that I have no liability as to the outcome of such use. If, for example, you use a command as documented and a floppy disk is ejected from your disk drive with such force that it severs your head from your neck, tough. Next time, duck.

## 1.177 cia\_author

Author's Documentation: CIATracker.lib Documentation

Neil O'Rourke

Version 1.6 (24/6/94)

Introduction

~~~~~

The standard soundtracker replay routines supplied with Blitz Basic 2 have

many faults, which this library attempts to overcome. Some of the features are:

- Plays all ST/NT/PT songs that utilise either the VBLANK timing or the more recent CIA based timings
- Plays back correctly on 50/60Hz systems, running either PAL or NTSC
- Contains more specialised functions for advanced programmers
- Enables the programmer to synchronise graphics with their music

Credits:

~~~~~

Original ProTracker playroutine by Amiga Freelancers, converted and enhanced for Blitz by Neil O'Rourke. Naggings from Roy, Jeff and Richard.

The 1.6 upgrade

~~~~~

This is a maintenance upgrade, with some subtle (and not so subtle) bugs fixed or noted.

LoadTrackerModule no longer crashes the machine if the name was invalid.

SetTrackerMask has been removed for the moment (this was causing the TrackerEvent system to foul up)

WaitTrackerEvent has a nasty tendency to lock the machine up. Don't call this command, use While NOT CheckTrackerEvent:Wend to wait for an event if you must. WaitTrackerEvent currently sits on the VBLANK interrupt, however I think the problem is due to the sheer bulk of ciaTrackerLib getting in the way of checking. I think.

GetTrackerNoteNumber was found to be chewing up CPU time, and has been replaced by a new version that chews up 2K of ram extra.

I've found that if you have run errors enabled to bring up the requester, your module won't start sometimes. Don't know what to do about this, as I don't know what causes it.

## 1.178 cia\_quickusage

Quick Usage:

~~~~~

First you must set the DMAWait time with the SetDMAWait command. Then, enable all the channels with SetTrackerMask. Load the module you want with the LoadTrackerModule command, and then either StartTrackerModule it, or InitTracker/RestartTracker later on.

## 1.179 cia\_ltm module

Function: LoadTrackerModule

-----

Syntax : success=LoadTrackerModule(TrackerModule#,FileName\$)



**Description:**

Loads the named module into chip ram, ready for playing. This command can only be called in Amiga mode. success is a boolean return code (true). If the load fails for any reason, success returns the AmigaDOS error code.

Note that there is an implicit call to FreeTrackerModule for whatever module you are trying to load. However, if you want to load another module, don't try to load it on top of the existing one that is playing. Use another TrackerModule# (you have from 0 to 8). The results are unpredictable, and range from nothing to a system crash. We can't call StopTracker, because this will stop everything.

## 1.180 cia\_stracker

Function: StartTracker

Syntax : success=StartTracker(TrackerModule#)

**Description:**

Starts to play the requested module, stopping any modules already playing, or restarts the current module, and returns true. Returns false if the module couldn't be started for some reason (like it isn't loaded).

## 1.181 cia\_stoptracker

Statement: StopTracker

**Description:**

Stops the current module

## 1.182 cia\_sdwait

Statement: SetDMAWait

Syntax : SetDMAWait value

**Description:**

This sets the DMA Wait for your machine. On a standard 7.14MHz 68000 based machine, the value is the default (300). However, faster machines can cause the replay routine to skip notes. On a 25MHz 68030 machine, the suggested value is 900. Set this as low as possible so that you still hear all the notes. A future upgrade \*may\* do this automatically, but I have no intention of implementing it at this stage, as I don't know what DMAWait to set for different speed processors and version motherboards.

DMA wait is important. Technically, when the replay routine loads the chip registers with the information about the current note (location, volume, pitch), a delay is needed to ensure that the chips actually get

the data, which happens on the next DMA slot. Since the CPU can be clocked independantly of the motherboard, we can't just delay by a set amount. How this problem has been solved is a busy wait that simply loops around the number of times as specified by the DMAWait value. A low value therefore lessens the load on the CPU but increases the chances of missing notes while playing a song. Too high a value can bog the CPU down, and slow the song down as interrupts are missed.

### 1.183 cia\_ftmodule

Statement: FreeTrackerModule

---

Syntax : FreeTrackerModule TrackerModule#

Description:

This frees a module loaded with LoadTrackerModule. You cannot free a module that has been set up with SetTrackerModule (see below), but there is nothing to stop you trying.

### 1.184 cia\_stmodule

Statement: SetTrackerModule

---

Syntax : SetTrackerModule TrackerModule#,ModuleAddress

Description:

This sets an arbitrary area of memory as a tracker module, useful if you have BLoaded a file and want to hear if it is a module. Caution: a non-module may crash the Amiga.

### 1.185 cia\_gtsize

Functions: GetTrackerSize & GetTrackerLocation

---

Syntax : trackerlength=GetTrackerSize(TrackerModule#)  
GetTrackerLocation (TrackerModule#)

Description:

Both these functions return information about the module that has been loaded with LoadTrackerModule. There should be no need to use this information, and these commands are only included because they served a purpose in debugging a long time ago, and to remove them would cause problems with the Blitz tokens

### 1.186 cia\_gtevent

Function: GetTrackerEvent

---

Syntax : trackerevent=GetTrackerEvent

Description:

This command is a customised extension to the ProTracker replay routine. A "TrackerEvent" occurs when the replay routine comes across a \$8xx command. This command is not defined in the command list, and many demos (eg Jesus on E's) use it to trigger effects. This command gets the most recent TrackerEvent, so any program looking at this will have to compare the current value to the value that triggered the current effect.

### 1.187 cia\_ctevent

Function: CheckTrackerEvent

---

Syntax : success=CheckTrackerEvent

Description:

This routine checks to see if a TrackerEvent has occurred since the last time the routine was called, and returns True if it has. Use GetTrackerEvent to determine what data the \$8xx command had.

### 1.188 cia\_wtevent

Statement: WaitTrackerEvent

---

\*\* V1.6: DO NOT USE THIS COMMAND! \*\*

### 1.189 cia\_ctmid

Function: CheckTrackerModuleID

---

Syntax : success=CheckTrackerModuleID(TrackerModule#)

Description:

This checks the module for the standard Pro/Noise/SoundTracker ID string "M.K." (or "M!K!" in the case of a 100 pattern PT module), and returns True if one of them is found. This means that you can safely call StartTracker.

Note that there is no 100% guaranteed way of determining what is a module and what isn't. Bit Arts, for example, remove the M.K. identifier to make it harder to rip modules, so if you're writing a module ripping program, you have to take this result with a grain of salt.

---

### 1.190 cia\_gtvolume

Function: GetTrackerVolume

---

Syntax : volume=GetTrackerVolume(TrackerChannel#)

Description:

Returns the last volume set by a \$Cxx command for the named channel, which are numbered from 0 to 3. This is not the "real" volume of the sample that is currently playing.

### 1.191 cia\_gtnote

Function: GetTrackerNote

---

Syntax : note=GetTrackerNote(TrackerChannel#)

Description:

Returns the note that the play routine has just played in the named channel. This command is really only useful for graphic bars or simple synchronisation of graphics to the music, but for that purpose the TrackerEvent commands are far more flexible. Note that the value returned is the period of the note. You have to look up the note in a period table to find out what was actually being played.

### 1.192 cia\_sttempo

Statement: SetTrackerTempo

---

Syntax : SetTrackerTempo Tempo

Description:

Sets the tempo of the current song. Note that a tempo command (\$Fxx) will override any value set by this command. This command is really a stub to the actual \$Fxx command in the playroutine, and has all the features associated with it. Check your tracker docs for more details.

### 1.193 cia\_gtinstrument

Function: GetTrackerInstrument

---

Syntax : instrument=GetTrackerInstrument(TrackerChannel#)

Description:

Gets the instrument that is playing in the channel.

---

### 1.194 cia\_gpposition

Function: GetPatternPosition

---

Syntax : PatPos=GetPatternPosition

Description:

This returns the current position in the current pattern.

### 1.195 cia\_gsongposition

Function: GetSongPosition

---

Syntax : SongPos=GetSongPosition

Description:

This returns the current pattern that is playing in the song

### 1.196 cia\_ssposition

Statement: SetSongPatternPosition

---

Syntax : SetSongPatternPosition Pattern#,Position#

Description:

This command sets what pattern to play, and from what position. Use this while a song is playing to jump to another pattern (eg. a game over music). Call StartTrackerPatPos() to start a module from scratch.

### 1.197 cia\_gsonglength

Function: GetSongLength

---

Syntax : NumPatterns=GetSongLength

Description:

Returns the number of patterns in the current module. Useful for displays like in IntuiTracker, where the title bar of the window gives a display that can be done like:

```
NPrint GetSongLength,":",GetSongPosition
```

### 1.198 cia\_stmask

Statement: SetTrackerMask

---

Syntax : SetTrackerMask Mask

\*\* REMOVED IN V1.6 \*\*

### 1.199 cia\_ogtnnumber

Function: OldGetTrackerNoteNumber

---

Syntax : notenumber=OldGetTrackerNoteNumber(Channel#)

Description:

This returns the number of the note played on the specified channel, with C-1 being note 1. Of use really in creating "equalizer bars".

V1.6: This command has turned out to be a CPU-hog! The new implementation will consume a lot of memory but will be much faster. When you load your old programs, GetTracker... will be replaced by OldGetTracker..., so your code will continue to work.

### 1.200 cia\_stppos

Function: StartTrackerPatPos

---

Syntax : ret.l=StartTrackerPatPos(TrackerModule#,Pattern#,Position#)

This starts the named module at the requested pattern and position. In all other respects it is the same as StartTracker.

### 1.201 cia\_prtracker

Statements: PauseTracker & RestartTracker

---

Description:

These commands allow you to stop a tracker module and restart it at a later time.

### 1.202 cia\_ptsample

Statement: PlayTrackerSample

---

Syntax : PlayTrackerSample Sample#,Period,Volume,Channel

Description:

Plays a sample through the channel. The module must not be running.

---

### 1.203 cia\_itracker

Statement: InitTracker

---

Syntax : success=InitTracker(TrackerModule#)

Description:

Identical to StartTracker, except that the module doesn't start, but is initialised. Of use with the commands that use the current tracker module. Use ReStartTracker to start playing.

### 1.204 cia\_gslocation

Function: GetSampleLocation

---

Syntax : location=GetSampleLocation(Sample#)

Description:

Returns the address in memory of the named sample in the current module.

### 1.205 cia\_gslength

Function: GetSampleLength

---

Syntax : length=GetSampleLength(Sample#)

Description:

Returns the length in words of the named sample in the current module. Multiply by two to get the byte length.

### 1.206 cia\_gsname

Function: GetSampleName

---

Syntax : name%=GetSampleName(Sample#)

Description:

Returns the name of the sample in name\$.

### 1.207 cia\_gtname

Function: GetTrackerName

---

Syntax : name%=GetTrackerName(TrackerModule#)

Description:

Returns the name of the module in name\$

---

## 1.208 cia\_bntable

Statement: BuildNoteTable

---

Description:

This command builds a note table for use with GetTrackerNoteNumber. It consumes 2K of memory for the look-up table.

## 1.209 cia\_gtnnumber

Function: GetTrackerNoteNumber

---

Syntax : notenumber=GetTrackerNoteNumber(Channel#)

Description:

This returns the number of the note played on the specified channel, with C-1 being note 1. Of use really in creating "equalizer bars".

For speed purposes, no error checking (like, has the note table been built?) is done.

## 1.210 elmoremain

There's not much to tell about the Elmore library, it's GREAT!

Library name: ELMORELIB

Written by: Richard T. Elmore

Copyright: 1994 HeadSoft Software

Library number: 111

Hardware Programming

Math/Numeric functions

Array functions

Intuition Programming

String Handling

Library Programming

## 1.211 elmore\_hardwareindex

ELMORE HARDWARE LIBRARY

---

ClickMouse

ForceNTSC

ForcePAL

Freq

Quiet

---



```
ResetTimer  
VwaitPos  
=CheckAGA  
=ChipFree  
=Depth  
=FastFree  
=JoyC  
=LargestFree  
=Peekto$  
=Ticks
```

## 1.212 elmore\_mathindex

### ELMORE MATH LIBRARY

---

```
Rrandomize  
=Avg  
=Avg.L  
=Avg.Q  
=Largest  
=Largest.l  
=Largest.q  
=Rrnd  
=Smallest  
=Smallest.l  
=Smallest.q  
=Xor
```

## 1.213 elmore\_intuitionindex

### INTUITION PROGRAMMING

---

```
Request  
ShowRequestors  
WaitFor  
=Activescreen  
=ActiveWindow  
=ScreenHeight  
=ScreenWidth
```

## 1.214 elmore\_stringindex

### STRING HANDELING

---

```
=Bin#  
=CharCount  
=Checksum
```

---

```

=Cipher$
=Hex#
=NULL
=Repeats
=SearchBegin
=SearchBegin
=Space$

```

## 1.215 elmore\_libraryindex

### LIBRARY PROGRAMMING

---

These functions will return the base address of their respective libraries, for advanced system programming. Note that register A6 will also be loaded with this address, to make programming a bit easier for assembly routines.

```

CommoditieBase
DiskfontBase
DosBase
FFPBase
GraphicsBase
IconBase
IntuitionBase
RexxsysBase

```

## 1.216 elm\_quiet

Statement: QUIET

---

Syntax: Quiet ChannelMask  
 Modes: Amiga or Blitz

This command will silence the sound channels specified by ChannelMask. See the description for "Envelope" for more information on channelmasks.

## 1.217 elm\_freq

Statement: FREQ

---

Syntax: Freq Channelmask,period  
 Modes: Amiga or Blitz

This command allows you to change the period, or pitch, of the currently playing sound effect. Note that the lower the period, the higher the frequency; Thus, a period of 100 would be very high-pitched, whereas a period of 30000 would be low-pitched.

---

## 1.218 elm\_ticks

Function: TICKS

---

Syntax: Ticks

Modes: Amiga or Blitz

This function returns the number of "ticks" since the Amiga was switched on, or since the last "RESETTIMER" command. The unit of measurement is 1/60 of a second for NTSC machines, and 1/50 of a second for PAL machines.

See Also: ResetTimer

## 1.219 elm\_resettimer

Statement: RESETTIMER

---

Syntax: ResetTimer

Modes: Amiga or Blitz

Resets the Amiga's hardware timer to zero "ticks." Read the description for TICKS for more information.

## 1.220 elm\_joyc

Function: JOYC

---

Syntax: JoyC (Port)

Modes: Amiga or Blitz

This function works similarly to the JoyB() function, however it allows you to read the second fire button on two-button joysticks. It will return a 1 if the normal fire button is pressed, a 2 if the second button is pressed, or 3 if both buttons are pressed. Otherwise, it will return a zero (no buttons pressed.)

## 1.221 elm\_vwaitpos

Statement: VWAITPOS

---

Syntax: VWaitPos RasterLine

Modes: Amiga or Blitz

This command is similar to VWAIT, except it allows you to wait for any raster position, not just the top of the display. This is useful for interesting graphics effects.

---

### 1.222 elm\_checkaga

Function: CHECKAGA

---

Syntax: CheckAGA

Modes: Amiga or Blitz

Returns 'TRUE' for AGA machines, otherwise returns 'FALSE.' Using ExecVersion alone will not detect an AGA machine. Kickstart version 39 can and does run on pre-AGA machines, such as the A3000, etc. Therefore, this function is provided to allow you to accurately determine if the AGA chipset is present.

### 1.223 elm\_peekto

Function: PEEKTO\$

---

Syntax: PeekTo\$ (Address,byte)

Modes: Amiga or Blitz

PeekTo\$() is similar to the Peek\$() function, except you can specify what terminator byte to use. With Peek\$() the terminator will always be zero, but PeekTo\$() will accept any byte value as a terminator.

### 1.224 elm\_forcepal

Statement: FORCEPAL

---

Syntax: ForcePAL

Modes: Amiga or Blitz

This command switches the current screen from NTSC to PAL.

### 1.225 elm\_forcentsc

Statement: FORCENTSC

---

Syntax: ForceNTSC

Modes: Amiga or Blitz

This command switches the current screen from PAL to NTSC.

### 1.226 elm\_depth

Function: DEPTH

---

Syntax: Depth (Bitmap#)

Modes: Amiga or Blitz

This function returns the depth of the specified Blitz2 bitmap object.

## 1.227 elm\_clickmouse

Statement: CLICKMOUSE

---

Syntax: ClickMouse

Modes: Amiga or Blitz

Similar to Mousewait, this command halts program execution until the user clicks the mouse. There must be a separate mouseclick for each CLICKMOUSE command, unlike Mousewait, which will continue through without pausing if the left mouse button was already being pressed.

NOTE: Avoid using this command in Amiga mode, as it seriously degrades multitasking.

## 1.228 elm\_chipfree

Function: CHIPFREE

---

Syntax: ChipFree

Modes: Amiga or Blitz

This function will return the size, in bytes, of the largest block of free CHIP memory in your system.

See Also: FastFree , LargestFree

## 1.229 elm\_fastfree

Function: FASTFREE

---

Syntax: FastFree

Modes: Amiga or Blitz

This function returns the size of the largest block of FAST memory.

## 1.230 elm\_largestfree

Function: LARGESTFREE

---

Syntax: LargestFree

Modes: Amiga or Blitz

This function will return the size of the largest chunk of memory available. This memory may be FAST or CHIP, depending on your system.

### 1.231 elm\_xor

Function: XOR

---

Syntax: Xor (expression,expression)

Modes: Amiga or Blitz

Returns Exclusive OR of two expressions This function returns the "exclusive-OR" or the two supplied arguments. For example, Xor(255,170) will return 85, and Xor(-1) will return 0.

### 1.232 elm\_largestl

Function: LARGEST.L

---

Syntax: Largest.l (Long Integer1,Long Integer2)

Modes: Amiga or Blitz

This function will return the larger of the two supplied long integers. For example, Largest.l(255,20045) would return 20045.

### 1.233 elm\_smallestl

Function: SMALLEST.L

---

Syntax: Smallest.l (Long Integer1,Long Integer2)

Modes: Amiga or Blitz

This function will return the smaller of two supplied long integers. For example, Smallest.l(-999,5) would return -999.

### 1.234 elm\_largestq

Function: LARGEST.Q

---

Syntax: Largest.q (Quick1,Quick2)

Modes: Amiga or Blitz

Identical to the function Largest.l except that it accepts quick-type variables or expressions.

---

### 1.235 elm\_smallestq

Function: SMALLEST.Q

---

Syntax: Smallest.q (Quick1,Quick2)

Modes: Amiga or Blitz

Identical to Smallest but uses quick-types.

### 1.236 elm\_largest

Function: LARGEST

---

Syntax: Largest (Integer1,Integer2)

Modes: Amiga or Blitz

This is the fastest "Largest()" function. Note that if passed floats or quick-types, the fraction will be cut off. See description for Largest.l and Largest.q  
LARGESTQ}.

### 1.237 elm\_smallest

Function: SMALLEST

---

Syntax: Smallest (Integer1,Integer2)

Modes: Amiga or Blitz

Like Smallest.l and Smallest.q  
SMALLESTQ}, with less accuracy, but faster than the long-integer and quick-type versions.

### 1.238 elm\_avgl

Function: AVG.L

---

Syntax: Avg.l (Long Integer 1,Long Integer 2)

Modes: Amiga or Blitz

This function will return the average of two long-integers (although the fraction is cut off.) Thus, Avg.l(5,15)=10, and Avg.l(1,2)=1. (Since fractions will be cut off with this function, you may wish to use the quick-type version of this function for more accuracy.)

### 1.239 elm\_avgq

Function: AVG.Q

---

Syntax: Avg.q (Quick1,Quick2)

Modes: Amiga or Blitz

See the description for Avg.l .

## 1.240 elm\_avg

Function: AVG

---

Syntax: Avg (Integer1,Integer2)

Modes: Amiga or Blitz

See the description for Avg.l .

This version is the fastest Avg() function available.

## 1.241 elm\_rrandomize

Statement: RRANDOMIZE

---

Syntax: RRandomize Seed

Modes: Amiga or Blitz

Given a float-type expression or variable, RRandomize will "seed" the reproducible random number generator. The sequence of pseudo-random numbers produced by RRND will be the same for each seed given it. If you require trully random numbers, try "RRandomize Ticks."

## 1.242 elm\_rrnd

Function: RRND

---

Syntax: RRnd (Low,High)

Modes: Amiga or Blitz

Given a range such as (1,6) this function will return a random number based on the seed given it by RRandomize  
These sets of "random" numbers can be repeated if you provide the same seed. This can be useful in games, etc. so that using "RRandomize Level#" and then using the RRnd() function to randomly draw the screen, each time the player returns to that particular level, it will be the same.

## 1.243 elmore\_arrayindex



## ELMORE ARRAY LIBRARY

Function: INDEX

---

Syntax: Index List()

Modes: Amiga or Blitz

Returns index from top of LIST This function will return the current index number of the supplied List() array passed to it. For example, if the list pointer is currently at item 10 in the list, Index would return 10.

## 1.244 elm\_request

Statement or Function: REQUEST

---

Syntax: Request (Title\$,Text\$,GadgetText\$)

Modes: Amiga

This command is 2.0-specific. If you're still using 1.3, this command will be unavailable to you.

"Request" can be used as both a command or a function. You may provide an optional title (or "" for default window title) a string of text (separated by pipes "|" for each line) and a string containing text for gadgets within the requester. (Separate with "|" if you need more than one.)

Used as a command, it merely displays the requester on the current screen and waits for the user to click a gadget. As a function, it will also return a number corresponding to the gadget selected. The gadget on the right should be reserved for negative responses such as "CANCEL" or "NO" and will always return zero. Other gadgets will return values in the order that they appear, beginning with 1 for the first gadget, 2 for the next, etc.

## 1.245 elm\_activescreen

Function: ACTIVESCREEN

---

Syntax: ActiveScreen

Modes: Amiga

This function returns ADDRESS of current Intuition screen. This is useful with many Intuition library commands, or to find out information about the currently active screen.

## 1.246 elm\_screenwidth

Function: SCREENWIDTH

---

Syntax: ScreenWidth

Modes: Amiga

This function returns the pixelwidth of the currently active screen.

### 1.247 elm\_screenheight

Function: SCREENHEIGHT

---

Syntax: ScreenHeight

Modes: Amiga

This function returns the pixelheight of the active screen

### 1.248 elm\_activewindow

Function: ACTIVEWINDOW

---

Syntax: ActiveWindow

Modes: Amiga

This function returns the address of the current window.

This address is mainly used in conjunction with Intuition library commands.

### 1.249 elm\_waitfor

Statement or Function: WAITFOR

---

Syntax: WaitFor (IDCMP Code)

Modes: Amiga

Similar to WaitEvent, WAITFOR puts the Amiga to "sleep" until a specified IDCMP code wakes it up. For example, WaitFor \$400 would wait until the user strikes a key, and WaitFor \$8 would wait until the "close" gadget of the current window was clicked on. These IDCMP codes are additive, so WaitFor \$408 would wait until either the "close" gadget was selected, or a key was pressed. Refer to the section on "windows" in the Blitz2 Reference Manual for more information on IDCMP codes.

### 1.250 elm\_showreq

Statement: SHOWREQUESTERS

---

Syntax: ShowRequesters OPTION>

Modes: Amiga or Blitz

OPTIONS: 0=Cancel all requesters

1=Show requesters on Workbench Screen

2=Direct requesters to current window

This command allows you to force system requesters like "Please insert volume Foo in any drive" etc. to either be turned off, directed to the workbench, or directed to the current window. When requesters are turned off, the system will behave as if the "CANCEL" gadget was selected for each requester that would otherwise have been displayed. Be sure to re-activate requesters before exiting your program!

## 1.251 elm\_checksum

Function: CHECKSUM

---

Syntax: Checksum (String\$)

Modes: Amiga or Blitz

Given a string, Checksum() will return a unique 32-bit integer as a checksum, useful in situations such as serial transfers, etc. to ensure both parties have the same data.

## 1.252 elm\_charcount

Function: CHARCOUNT

---

Syntax: CharCount (String\$,byte)

Modes: Amiga or Blitz

This function will return the number of occurrences of a given byte within a string. For example, CharCount(text\$,32) will count the number of spaces in text\$.

## 1.253 elm\_searchbegin

Function: SEARCHBEGIN

---

Syntax: SearchBegin (String\$,byte,# from Begin)

Modes: Amiga or Blitz

Similar to Instr(), SearchBegin will search the given string for the specified byte. For example, SearchBegin(a\$,32,1) will return the character position of the first space in a\$, while SearchBegin(a\$,32,3) will return the position of the

---

third space. If the byte is not found in the string, SearchBegin will return a zero.

### 1.254 elm\_searchend

Function: SEARCHEND

---

Syntax: SearchEnd (String\$,byte,# from End)

Modes: Amiga or Blitz

Like SearchBegin() (above) except it searches from the end of the string to the front. For example, SearchBegin(a\$,asc("A"),2) will return the character position of the second-from-last letter "A" in the string 'a\$.'

### 1.255 elm\_cipher\$

Function: CIPHER\$

---

Syntax: Cipher\$ (String\$)

Modes: Amiga or Blitz

The Cipher\$() function will encrypt or decrypt a string passed to it. This is especially handy if you don't want users "zapping" your executeable or data files to read it's contents. Note that Cipher\$() can only decrypt strings previously created with Cipher\$().

### 1.256 elm\_null

Function: NULL

---

Syntax: Null (String\$)

Modes: Amiga or Blitz

Many Amiga shared libraries (like the DOS library) require addresses of null-terminated strings as arguments. This function will return a long-integer address of a null-terminated string in memory for such commands.

### 1.257 elm\_repeats

Function: REPEATS

---

Syntax: Repeats (String\$)

Modes: Amiga or Blitz

This function will return the number of repeated bytes at the

---

beginning of your string. Thus, `Repeats("...Test")` would return 3, while `Repeats("Example")` would return 1. If the string is null, `Repeats()` will return zero.

### 1.258 `elm_space$`

Function: `SPACE$`

---

Syntax: `SPACE$ (number of spaces)`

Modes: Amiga or Blitz

This function is identical to the `Space$` function in many other dialects of BASIC. It will return a string containing the desired number of spaces, making it easier to align tables etc. to the screen or printer.

### 1.259 `elm_bin#`

Function: `BIN#`

---

Syntax: `Bin# (BinString$)`

Modes: Amiga or Blitz

This function accepts binary value stored in a string and returns the decimal value.

### 1.260 `elm_hex#`

Function: `HEX#`

---

Syntax: `Hex# (HexString$)`

Modes: Amiga or Blitz

This function accepts hexadecimal value stored in a string and returns the decimal value.

### 1.261 `elm_intuibase`

Function: `INTUITIONBASE`

---

Syntax: `IntuitionBase`

Modes: Amiga or Blitz

Returns Intuition Library base

---

## 1.262 elm\_dosbase

Function: DOSBASE

---

Syntax: DosBase

Modes: Amiga or Blitz

Returns DOS Library base

## 1.263 elm\_graphicsbase

Function: GRAPHICSBASE

---

Syntax: GraphicsBase

Modes: Amiga or Blitz

Returns Graphics Library base

## 1.264 elm\_ffpbase

Function: FFPBASE

---

Syntax: FFPBase

Modes: Amiga or Blitz

Returns FFP Math Library base

## 1.265 elm\_diskfontbase

Function: DISKFONTBASE

---

Syntax: DiskFontBase

Modes: Amiga or Blitz

Returns DiskFont Library base

## 1.266 elm\_commo

Function: COMMODITIESBASE

---

Syntax: CommoditiesBase

Modes: Amiga or Blitz

Returns Commodities Library base

---

## 1.267 elm\_iconbase

Function: ICONBASE

---

Syntax: IconBase

Modes: Amiga or Blitz

Returns Icon Library base

## 1.268 elm\_rexxbase

Function: REXXSYSBASE

---

Syntax: REXxSysBase

Modes: Amiga or Blitz

Returns REXxSys Library base

## 1.269 info

---

Blitz2 Guidefile Info

---

BlitzBasic is copyrighted to Acid Software  
=====

I created this file because I was sick of loading everytime the doc files in the background. So I started to do some typing and block cutting with the original doc files delivered with the libs.

I'm glad that these library's are created because they make Blitz2 a lot better and more usefull.

You can contact me on internet if needed: [j.valks@hsbos.nl](mailto:j.valks@hsbos.nl)

Special thanks are going to Simon Armstrong of Acid Software for giving me the BUM ascii files. Thanks!

Written by:

Jurgen Valks (BlitzUser 418)  
Kerkeind 8a  
5293 AB Gemonde (NB)  
The Netherlands

This file is to big now! I gonna make a other file with commands and syntax only...

## 1.270 bummain

---

Choose a item:

|                         |         |                           |         |
|-------------------------|---------|---------------------------|---------|
| Amiga Support library   | (BUM 6) | Palette library Additions | (BUM 5) |
| Anim library            | (BUM 2) | Screen library Additions  | (BUM 5) |
| Arexx library           | (BUM 2) | Window library Additions  | (BUM 5) |
| Console library         | (BUM 6) | New Screen Flags          | (BUM 4) |
| Crunch library          | (BUM 6) |                           |         |
| Elmore library          | (BUM 6) | AGA Palette Handling      | (BUM 4) |
| Locale library          | (BUM 6) | 3.0 Bitmap Handling       | (BUM 4) |
| Med library             | (BUM 2) | New Gadget Handling       | (BUM 4) |
| Printer library         | (BUM 6) |                           |         |
| SerialPort library      | (BUM 2) | Date & Time Commands      | (BUM 4) |
| The New Display library | (BUM 5) | Environment Commands      | (BUM 4) |
| The New ASL library     | (BUM 5) | New Drawing Commands      | (BUM 4) |
| The GadTools library    | (BUM 5) |                           |         |
| Misc Additions          | (BUM X) |                           |         |

## 1.271 bum\_misc

### MISC ADDITIONS

These are misc commands added in several BUM magazines:

```

BlitColl
Block
Exists
ILBMViewMode
LoadFont
LoadShape
ReMap
Runerrsoff
Runerrson
SetBPLCON0
ShapeGadget
ShowBitmap
SortList
SpriteMode
Vpos

```

## 1.272 bum\_sortlist

Statement: SortList

Syntax: SortList Arrayname()

The SortList command is used to rearrange the order of elements in a Blitz2 linked list. The order in which the items are sorted depends on the first field of the linked list type which must be a single integer word. Sorting criteria will be extended in future releases.



### 1.273 bum\_loadfont

Statement: LoadFont

---

Syntax: LoadFont IntuiFont#,Fontname.font\$,Y size [,style]

The LoadFont command has been extended with an optional style parameter. The following constants may be combined:

```
#underlined=1
#bold=2
#italic=4
#extended=8 ;wider than normal
#colour=64 ;hmm use colour version I suppose
```

### 1.274 bum\_spritemode

Statement: SpriteMode

---

Syntax: SpriteMode mode

For use with the capabilities of the new Display library SpriteMode is used to define the width of sprites to be used in the program. The mode values 0, 1 and 2 correspond to the widths 16, 32 and 64.

### 1.275 bum\_exists

Function: Exists

---

Syntax: Exists (FileName\$)

Exists actually returns the length of the file, if 0 the file either does not exist or is empty or is perhaps not a file at all! Hmmm, anyway the following poke turns off the "Please Insert Volume Blah:" requester so you can use Exists to wait for disk changes:

```
Poke.l Peek.l(Peek.l(4)+276)+184,-1
```

### 1.276 bum\_runerrson

Statements: Runerrson & Runerrsoff

---

Syntax: Runerrson & Runerrsoff

These two new compiler directives are for enabling and disabling error checking in different parts of the program, they override the settings in Compiler Options.

---

## 1.277 bum\_block

Statement: Block

---

Syntax: Block Shape#,X,Y

Modes: Amiga/Blitz

Description:

Block is an extremely fast version of the Blit command with some restrictions. Block should only be used with shapes that are 16,32,48,64... pixels wide and that are being blitted to an x position of 0,16,32,48,64...

Note that the height and y destination of the shape are not limited by the Block command. Block is intended for use with map type displays.

## 1.278 unnamed.1

Statement: LoadFont

---

Syntax: LoadFont IntuiFont#,Fontname.font\$,Y Size

Modes: Amiga

Description:

LoadFont is used to load a font from the fonts: directory. Unlike BlitzFonts any size IntuiFont can be used. The command WindowFont is used to set text output to a certain IntuiFont in a particular Window.

## 1.279 bum\_vpos

Function: VPos (add to chapter 5)

---

Syntax: VPos

Modes: Amiga/Blitz

Description:

VPos returns the video's beam vertical position. Useful in both high-speed animation where screen update may need to be synced to a certain video beam position (not just the top of frame as with VWait) and for a fast random number generator in non frame-synced applications.

## 1.280 bum\_animlib

The Anim.lib

The following 4 commands allow the display of Animations in Blitz BASIC. The Animation must be compatible with the DPaint 3 format, this method uses long delta (type 2) compression and does not include any palette changes.

---

## The Anim Commands:

```
LoadAnim
InitAnim
NextFrame
Frames
```

Anims in nature use a double buffered display, with the addition of the ShowBitMap command to Blitz we can now display (play) Anims in both Blitz and Amiga modes. An Anim consists of an initial frame which needs to be displayed (rendered) using the InitAnim command, subsequent frames are then played by using the NextFrame command. The Frames() function returns the number of frames of an Anim. We have also extended the LoadShape command to support Anim brushes. The following example loads and plays an Anim on a standard Amiga (Intuition) Screen.

```
;
;play anim example
;
;anim file name could use f$=par$(1) to play anim from cli
f$="test.anim"
;open screen same resolution as animation

ILBMInfo f$
Screen 0,0,0,ILBMWidth,ILBMHeight,ILBMDepth,ILBMViewMode,"",1,2
ScreensBitMap 0,0

;an extra bitmap same size as screensbitmap for double buffering

BitMap 1,ILBMWidth,ILBMHeight,ILBMDepth

;load anim and set screen colours to same as animation

LoadAnim 0,f$,0:Use Palette 0

;draws first frame to current bitmap (1) and bitmap #0

InitAnim 0,0
While Joyb(0)=0
    ShowBitMap db          ;tell intuition which bitmap to display
    VWait                  ;wait for top of frame
    db=1-db                ;swap current bitmap
    Use BitMap db
    NextFrame 0            ;and draw next frame
Wend
```

**1.281 bum\_loadanim**

Statement: LoadAnim

---

Syntax: LoadAnim Anim#,FileName\$[,Palette#]

Modes: Amiga

Description:

The LoadAnim command will create an Anim object and load a DPaint

---

compatible animation. The ILBMInfo command can be used to find the correct screensize and resolution for the anim file. The optional Palette# parameter can be used to load a palette with the anims correct colours.

Notes:

unlike more advanced anim formats DPaint anims use a single static palette for the entire animation. Like all other Blitz commands that access files the command must be executed in Amiga mode.

## 1.282 bum\_initanim

Statement: InitAnim

---

Syntax: InitAnim Anim#[,Bitmap#]

Modes: Amiga/Blitz

Description:

InitAnim renders the first two frames of the Anim onto the current BitMap and the BitMap specified by the second parameter. The second BitMap# parameter is optional, this is to support Anims that are not in a double-buffered format (each frame is a delta of the last frame not from two frames ago). However, the two parameter double buffered form of InitAnim should always be used. (hmmm don't ask me O.K.!!)

## 1.283 bum\_nextframe

Statement: NextFrame

---

Syntax: NextFrame Anim#

Modes: Amiga/Blitz

Description:

NextFrame renders the nextframe of an Anim to the current BitMap. If the last frame of an Anim has been rendered NextFrame will loop back to the start of the Animation.

## 1.284 bum\_frames

Function: Frames

---

Syntax: Frames (Anim#)

Description:

The Frames() function returns the number of frames in the specified Anim.

---

## 1.285 bum\_showbitmap

Statement: ShowBitMap

---

Syntax: ShowBitMap [BitMap#]

Modes: Amiga

Library: ScreensLib

Description:

The ShowBitMap command is the Amiga-mode version of the Show command. It enables you to change a Screens bitmap allowing double buffered (flicker free) animation to happen on a standard Intuition Screen.

Unlike Blitz mode it is better to do ShowBitMap then VWait to sync up with the Amiga's display, this will make sure the new bitmap is being displayed before modifying the previous BitMap.

## 1.286 bum\_blitcoll

Function: BlitColl

---

Syntax: BlitColl (Shape#,x,y)

Modes: Amiga/Blitz

Description:

BlitColl is a fast way of collision detection when blitting shapes. BlitColl returns -1 if a collision occurs, 0 if no collision. A collision occurs if any pixel on the current BitMap is non zero where your shape would have been blitted.

ShapesHit is faster but less accurate as it checks only the rectangular area of each shape, where as BlitColl takes into account the shape of the shape and of course it can not tell you what shape you have collided with.

Note: make sure only things that you want to collide with have been drawn on the BitMap e.g. don't Blit your ship and then try BlitColl!

## 1.287 bum\_ilbmviewmode

Statement: ILBMViewMode

---

Syntax: ILBMViewMode

Modes: Amiga/Blitz

Library: ILBMIFFLib

Description:

ILBMViewMode returns the viewmode of the file that was processed by ILBMInfo. This is useful for opening a screen in the right mode before using LoadScreen etc. The different values of ViewMode are as follows (add/or them for different combinations):

---

```
32768 ($8000) hires
2048  ($0800) ham
128   ($0080) halfbright
4      ($0004) interlace
0      ($0000) lores
```

See Also: ILBMInfo

Example:

```
;
;ilbminfo example
;
;iff file name could use f$=par$(1) to use cli argument
f$="test.iff"
;get ilbm information
ILBMInfo f$
;open screen with correct parameters
Screen 0,0,0,ILBMWidth,ILBMHeight,ILBMDepth,ILBMViewMode,"",1,2
;load the iff onto the screens
LoadScreen 0,f$,0
;set the palette
Use Palette 0
MouseWait
```

## 1.288 bum\_loadshape

Statement: LoadShape

---

Syntax: LoadShape Shape#,Filename\$[,Palette#]  
Modes: Amiga

Description:

The LoadShape command has now been extended to support anim brushes, if the file is an anim brush the shapes are loaded into consecutive shapes starting with the Shape# provided.

## 1.289 bum\_remap

Statement: ReMap

---

Syntax: ReMap colour#0,colour#1[,Bitmap]  
Modes: Amiga/Blitz  
Library: Sis2dLib

Description:

ReMap is used to change all the pixels on a BitMap in one colour to another colour. The optional BitMap parameter will copy all the pixels in Colour#0 to their new colour on the new bitmap.

---

## 1.290 bum\_shapegadget

Statement: ShapeGadget

---

Syntax: ShapeGadget GadgetList#,X,Y,Flags,Id,Shape#[,Shape#]

Mode: Amiga

### Description:

The ShapeGadget command allows you to create gadgets with graphic imagery. The Shape# parameter refers to a shape object containing the graphics you wish the gadget to contain.

The ShapeGadget command has been extended to allow an alternative image to be displayed when the gadget is selected. All other parameters are identical to those in TextGadget.

Example:

```
;
;ShapeGadget example
;
Screen 0,3
ScreensBitMap 0,0
;generate 2 shapes for our shape gadget
Cls:Circlef 15,15,15,2:Circlef 8,8,9,5,3:Circlef 24,8,9,2,3
GetaShape 1,0,0,32,32:Circlef 24,8,9,5,3:GetaShape 0,0,0,32,32
;
ShapeGadget 0,148,50,0,1,0,1
TextGadget 0,140,180,0,2,"EXIT"
Window 0,0,0,320,200,$100f,"ClickMe",1,2,0
```

Repeat

Until WaitEvent=64 AND GadgetHit=2

## 1.291 bum\_setbplcon0

Statement: SetBPLCON0

---

Syntax: SetBPLCON0 Default

Modes: Amiga/Blitz

### Description:

The SetBPLCON0 command has been added for advanced control of Slice display modes. The BPLCON0 hardware register is on page A4-1 of the reference manual (appendix 4). The bits of interest are as follows:

bit#1-ERSY external sync (for genlock enabling)  
 bit#2-LACE interlace mode  
 bit#3-LPEN light pen enable

Example:

```
;
; Blitz Interlaced Slice Example using BPLCON0
```

---

```

;
BitMap 0,640,512,4
; use SetBPLCON0 4 to set the lace bit on when slice is created
SetBPLCON0 4 ;set lace bit

BLITZ
;bitmap width=1280 so slice's bitmap modulus miss each 2nd line
Slice 0,44,640,256,$fffb,4,8,8,1280,1280 ;cludge the modulo
;every vertical blank either show odd lines or even lines
;depending on the long frame bit of VPOSR hardware register
SetInt 5
  If Peek($dff004)<0 Show 0,0,0 Else Show 0,0,1
End SetInt
;draw lines to prove it
For i=1 To 1000
  Line Rnd(640),Rnd(512),Rnd(640),Rnd(512),Rnd(16)
Next
;
MouseWait

```

## 1.292 bum\_speakcommands

Speak Commands

The Amiga speech synthesiser can be activated using the following commands. The narrator.device has been upgraded in Workbench2.0 increasing the quality of the speech. With a bit of messing around you can have a lot of fun with the Amiga's 'voice', Also note that these are compatible with the commands used in BlitzUser1's speech program.

Speak Commands:

```

Speak
SetVoice
Translate$
PhoneticSpeak
VoiceLoc

```

## 1.293 bum\_speak

Statement: Speak

Syntax: Speak string\$

Modes: Amiga

Description:

The Speak command will first convert the given string to phonetics and then pass it to the Narrator.Device. Depending on the settings of the Narrator device (see SetVoice ) the Amiga will "speak" the string you have sent in the familiar Amiga synthetic voice.



Example:

```
NPrint "Type something and hit return..."
NPrint "(just return to exit)"
Repeat
  a$=Edit$(80)
  Speak a$
Until a$=""
```

## 1.294 bum\_setvoice

Statement: SetVoice

---

Syntax: SetVoice rate,pitch,expression,sex,volume,frequency  
 Modes: Amiga

Description:

SetVoice alters the sound of the Amiga's speech synthesiser by changing:

Rate: measured in words per minute. Default 150, range 40-400.  
 Pitch: the BaseLine pitch in Hz. Default 110, range 65-320  
 Expression: 0=robot 1=natural 2=manual  
 Sex: 0=male 1=female  
 Volume: 0 to 64  
 Frequency: samples per second (22200)

As the following example shows you could very well rename the Speak command the Sing command!

```
;
; sing the praises of Blitz BASIC!
;
While Joyb(0)=0
  Pitch=65+Rnd(255)
  rate=100+Rnd(200)
  SetVoice rate,pitch,1,1,64,22200
  Speak "BLITZ BASIC"
Wend
```

## 1.295 bum\_translate\$

Function: Translate\$

---

Syntax: Translate\$(string\$)  
 Modes: Amiga

Description:

Translate\$() returns the phonetic equivalent of the string for use with the Translate

Example:

```
Print "Enter a Sentence ":a$=Edit$(80)
```

---

```
NPrint "Phonetic=",Translate$(a$)
MouseWait
```

## 1.296 bum\_phoneticspeak

Statement: PhoneticSpeak

---

Syntax: PhoneticSpeak phonetic\$  
 Modes: Amiga

Description:  
 PhoneticSpeak is similar to the Speak command but should only be passed strings containing legal phonemes such as that produced by the Translate\$() function.

## 1.297 bum\_voiceloc

Function: VoiceLoc

---

Syntax: VoiceLoc  
 Modes: Amiga

Description:  
 VoiceLoc returns a pointer to the internal variables in the speech synthesiser that enable the user to access new parameters added to the V37 Narrator Device. Formants as referred to in the descriptions are the major vocal tracts and are separated into the parts of speech that produce the bass, medium and treble sounds.

The new parameters are as listed

|                      |  |
|----------------------|--|
| \flags               | : set to 1 if using extended commands  |
| \f0enthusiasm        | : amount of pitch difference on accents default=32                                 |
| \f0perturb           | : amount of "wurbles" ie random shake default=0                                    |
| \f1adj,\f2adj,\f3adj | : pitch adjust for low medium and high frequency formants. 0=default               |
| \a1adj,\a2adj,\a3adj | : amplitude adjust for low medium and high frequency formants 0=default            |
| \articulate          | : speed of articulation 100=default  |
| \centralize          | : amount of the centphon vowel in other vowels 0=default                           |
| \centphon            | : a vowel to which all others are adjusted by the                                  |
| \centralize          | : variable,<br>(limited to IY,IH,EH,AE,AA,AH,AO,OW,UH,ER and UW)                   |
| \AVbias,\AFbias      | : amount of bias added to voiced and unvoiced speech sounds, (y,r,w,m vs st,sh,f). |
| \priority            | : task priority when speaking 100=default  |

Example:

```
;
```

---

```
; voiceloc() example
;

NEWTTYPE .voicepars          ;new V37 parameters available
    flags.b
    f0enthusiasm:f0perturb
    fladj:f2adj:f3adj
    aladj:a2adj:a3adj
    articulate:centralize:centphon$
    avbias.b:afbias:priority:padl
End NEWTYPE

*v.voicepars=VoiceLoc

*v\flags=1
*v\f0enthusiasm=82,90 ;old aged highly excited voice
*v\fladj=0,0,0      ;these are fun to mess with
*v\aladj=0,0,0
*v\centralize=50,"AO" ;no effect
*v\articulate=90
*v\avbias=20,20

Speak "COME ON EVERYBODY, DANCE? boom boom !"
End
```

## 1.298 bum\_medlib

The MED commands:

|                |              |
|----------------|--------------|
| LoadMedModule  | SetMedVolume |
| StartMedModule | GetMedVolume |
| PlayMed        | GetMedNote   |
| StopMed        | GetMedInstr  |
| JumpMed        | SetMedMask   |

## 1.299 bum\_loadmedmodule

Statement: LoadMedModule

Syntax: LoadMedModule MedModule# Name  
Modes: Amiga

### Description:

The LoadMedModule command loads any version 4 channel Octamed module. The following routines support upto and including version 3 of the Amiganut's Med standard.

The number of MedModules loaded in memory at one time is only limited by the MedModules maximum set in the Blitz2 Options requester. Like any Blitz commands that access files LoadMedModule can only be used in AmigaMode.

### 1.300 bum\_startmedmodule

Statement: StartMedModule

---

Syntax: StartMedModule MedModule#

Modes: Amiga/Blitz

Description:

StartMedModule is responsible for initialising the module including linking after it is loaded from disk using the LoadMedModule command. It can also be used to restart a module from the beginning.

### 1.301 bum\_playmed

Statement: PlayMed

---

Modes: Amiga/Blitz

Description:

PlayMed is responsible for playing the current MedModule, it must be called every 50th of a second either on an interrupt (#5) or after a VWait in a program loop.

### 1.302 bum\_stopmed

Statement: StopMed

---

Syntax: StopMed

Modes: Amiga/Blitz

Description:

StopMed will cause any med module to stop playing. This not only means that PlayMed will have no affect until the next StartMedModule but silences the audio channels so they are not left ringing as is the effect when PlayMed is not called every vertical blank.

### 1.303 bum\_jumpmed

Statement: JumpMed

---

Syntax: JumpMed Pattern#

Modes: Amiga/Blitz

Description:

JumpMed will change the pattern being played in the current module.

---

### 1.304 bum\_setmedvolume

Statement: SetMedVolume

---

Syntax: SetMedVolume Volume

Modes: Amiga/Blitz

Description:

SetMedVolume changes the overall volume that the Med Library plays the module, all the audio channels are affected. This is most useful for fading out music by slowly decreasing the volume from 64 to 0.

### 1.305 bum\_getmedvolume

Function: GetMedVolume

---

Syntax: GetMedVolume Channel#

Modes: Amiga/Blitz

Description:

GetMedVolume returns the current volume setting of the specified audio channel. This is useful for graphic effects that you may wish to sync to certain channels of the music playing.

### 1.306 bum\_getmednote

Function: GetMedNote

---

Syntax: GetMedNote Channel#

Modes: Amiga/Blitz

Description:

GetMedNote returns the current note playing from the specified channel. As with GetMedVolume this is useful for producing graphics effects synced to the music the Med Library is playing.

### 1.307 bum\_getmedinstr

Function: GetMedInstr

---

Syntax: GetMedInstr Channel

Modes: Amiga/Blitz

Description:

GetMedInstr returns the current instrument playing through the specified audio channel.

---

### 1.308 bum\_setmedmask

Statement: SetMedMask

---

Syntax: SetMedMask Channel Mask

Modes: Amiga/Blitz

Description:

SetMedMask allows the user to mask out audio channels needed by sound effects stopping the Med Library using them.

### 1.309 bum\_serialport

Serial Port Commands

The following are a set of commands to drive both the single RS232 serial port on an Amiga as well as supporting multiseriial port cards such as the A2232 card. The unit# in the following commands should be set to 0 for the standard RS232 port, unit 1 refers to the default serial port set by the advanced serial preferences program and unit 2 on refer to any extra serial ports available.

Serial Port Commands:

- OpenSerial
- WriteSerial
- WriteSerialString
- ReadSerial
- ReadSerialString
- CloseSerial
- SetSerialBuffer
- SetSerialLens
- SetSerialParams
- SerialEvent

### 1.310 bum\_openserial

Function: OpenSerial

---

Syntax: OpenSerial device\$,unit#,baud,io\_serflags

Modes: Amiga

Description:

OpenSerial is used to configure a Serial Port for use. As with OpenFile, OpenSerial is a function and returns zero if it fails. If it succeeds advanced users may note the return result is the location of the IOExtSer structure.

Use "serial.device" for device\$.

The baud rate should be in the range of 110-292,000. The io\_serflags parameter includes the following flags:

---

```
bit7: #serf_xdisabled=128 ; disable xon/xoff
bit6: #serf_eofmode=64    ; enable eof checking
bit5: #serf_shared=32     ; set if you don't need exclusive use of port
bit4: #serf_rad_boogie=16 ; high speed mode
bit3: #serf_queuedbrk=8   ; if set, a break command waits for buffer
                           empty
bit2: #serf_7wire=4       ; if set, use 7 wire RS232
bit1: #serf_parity_odd=2  ; select odd parity (even if not set)
bit0: #serf_parity_on=1   ; enable parity checking
```

### 1.311 bum\_writeserial

Statement: WriteSerial

---

Syntax: WriteSerial unit#,byte

Modes: Amiga

Description:

WriteSerial sends one byte to the serial port. Unit# defines which serial port is used. If you are sending characters use the Asc() function to convert the character to a byte e.g. WriteSerial 0,asc("b").

### 1.312 bum\_writeserialstring

Statement WriteSerialString

---

Syntax: WriteSerialString unit#,string

Modes: Amiga

Description:

WriteSerialString is similar to WriteSerial but sends a complete string to the serial port.

### 1.313 bum\_readserial

Function: ReadSerial

---

Syntax: ReadSerial (unit#) returns -1 if nothing waiting

Modes: Amiga

Description:

ReadSerial returns the next byte waiting in the serial port's read buffer. If the buffer is empty it returns a -1. It is best to use a word type (var.w=ReadSerial(0)) as a byte will not be able to differentiate between -1 and 255.

---

### 1.314 bum\_readserialstring

Function: ReadSerialString

---

Syntax: ReadSerialString (unit#)

Modes: Amiga

Description:

ReadSerialString puts the serial port's read buffer into a string, if the buffer is empty the function will return a null string (length=0).

### 1.315 bum\_closeserial

Statement: CloseSerial

---

Syntax: CloseSerial unit#

Modes: Amiga

Description:

The CloseSerial command will close the port, enabling other programs to use it.

Note: Blitz will automatically close all ports that are opened when a program ends.

### 1.316 bum\_setserialbuffer

Statement SetSerialBuffer

---

Modes: Amiga

Description:

SetSerialBuffer changes the size of the ports read buffer. This may be useful if your program is not always handling serial port data or is receiving and processing large chunks of data. The smallest size for the internal serial port (unit#0) is 64 bytes. The bufferlength variable is in bytes.

### 1.317 bum\_setseriallens

Statement: SetSerialLens

---

Syntax: SetSerialLens unit#,readlen,writelen,stopbits

Modes: Amiga

Description:

SetSerialLens allows you to change the size of characters read and written by the serial device. Generally readlen=writelen and should be set to either 7 or 8, stopbits should be set to 1 or 2.

---



Default values are 8,8,1.

### 1.318 bum\_setserialparams

Statement: SetSerialParams

---

Syntax: SetSerialParams unit#

Modes: Amiga

Description:

For advanced users, SetSerialParams tells the serial port when parameters are changed. This would only be necessary if they were changed by poking offsets from IOExtSer which is returned by the OpenSerial command.

### 1.319 bum\_serialevent

Function: SerialEvent

---

Syntax: SerialEvent (unit#)

Modes: Amiga

Description:

SerialEvent is used when your program is handling events from more than 1 source, Windows, ARexx etc.

This command is currently not implemented

### 1.320 bum\_arexxcommands

Here's a overview of the Arexx Commands:

|                 |                 |
|-----------------|-----------------|
| CreateMsgPort   | ReplyRexxMsg    |
| DeleteMsgPort   | GetRexxResult   |
| CreateRexxMsg   | GetRexxCommand  |
| DeleteRexxMsg   | GetResultString |
| ClearRexxMsg    | Wait            |
| FillRexxMsg     | RexxEvent       |
| CreateArgString | IsRexxMsg       |
| DeleteArgString | RexxError       |
| SendRexxCommand |                 |

### 1.321 bum\_createmsgport

Function: CreateMsgPort()

---

Syntax: PortAddress.l = CreateMsgPort("Name")

MODES: Amiga

Description:

CreateMsgPort is a general Function and not specific to ARexx.

CreateMsgPort opens an intuition PUBLIC message port of the name supplied as the only argument. If all is well the address of the port created will be returned to you as a LONGWORD so the variable that you assign it to should be of type long.

If you do not supply a name then a private MsgPort will be opened for you.

```
Port.l=CreateMsgPort("PortName")
```

It is important that you check you actually succeeded in opening a port in your program. The following code or something similar will suffice.

```
Port.l=CreateMsgPort("Name")
IF Port=0 THEN Error_Routine{}
```

The name you give your port will be the name that Arexx looks for as the HOST address, (and is case sensitive) so take this into consideration when you open your port. NOTE IT MUST BE A UNIQUE NAME AND SHOULD NOT INCLUDE SPACES.

## 1.322 bum\_deletemsgport

Statement: DeleteMsgPort()

---

Syntax: DeleteMsgPort Port

Modes: Amiga

Description:

DeleteMsgPort deletes a MessagePort previously allocated with CreateMsgPort(). The only argument taken by DeleteMsgPort is the address returned by CreateMsgPort(). If the Port was a public port then it will be removed from the public port list.

```
Port.l=CreateMsgPort("Name")
IF Port=0 Then End
DeleteMsgPort Port
```

Error checking is not critical as if this fails we have SERIOUS PROBLEMS.

YOU MUST WAIT FOR ALL MESSAGES FROM AREXX TO BE RECEIVED BEFORE YOU DELETE THE MSGPORT. IF YOU NEGLECT TO DELETE A MSGPORT BLITZ2 WILL DO IT FOR YOU AUTOMATICALLY ON PROGRAM EXIT.

---

### 1.323 bum\_createrexxmsg

Function: CreateRexxMsg()

---

Syntax: msg.l=CreateRexxMsg(ReplyPort,"exten","HOST")

Modes: Amiga

Description:

CreateRexxMsg() allocates a special Message structure used to communicate with Arexx. If all is successful it returns the LONGWORD address of this rexxmsg structure.

The arguments are ReplyPort which is the long address returned by CreateMsgPort(). This is the Port that ARexx will reply to after it has finished with the message.

EXTEN which is the exten name used by any ARexx script you are wishing to run. i.e. if you are attempting to run the ARexx script test.rexx you would use an EXTEN of "rexx".

HOST is the name string of the HOST port. Your program is usually the HOST and so this equates to the name you gave your port in CreateMsgPort(). REMEMBER IT IS CASE SENSITIVE.

As we are allocating resources error checking is important and can be achieved with the following code:

```
msg.l=CreateRexxMsg(Port,"rexx","HostName")
IF msg=0 THEN Error_Routine{}
```

### 1.324 bum\_deleterexxmsg

Statement: DeleteRexxMsg

---

Syntax: DeleteRexxMsg rexxmsg

Modes: Amiga

Description:

DeleteRexxMsg simply deletes a RexxMsg Structure previously allocated by CreateRexxMsg(). It takes a single argument which is the long address of a RexxMsg structure such as returned by CreateRexxMsg().

```
msg.l=CreateRexxMsg(Port,"rexx","HostName")
IF msg=0 THEN Error_Routine{}
DeleteRexxMsg msg
```

Again if you neglect to delete the RexxMsg structure Blitz2 will do this for you on exit of the program.

### 1.325 bum\_clearrexxmsg

---

Statement: ClearRexxMsg

---

Syntax: ClearRexxMsglk

Modes: Amiga

Description:

ClearRexxMsg is used to delete and clear an ArgString from one or more of the Argument slots in a RexxMsg Structure. This is most useful for the more advanced programmer wishing to take advantage of the Arexx #RXFUNC abilities.

The arguments are a LONGWORD address of a RexxMsg structure.

ClearRexxMsg will always work from slot number 1 forward to 16.

```
Port.l=CreateMsgPort("TestPort")
If Port = NULL Then End
msg.l=CreateRexxMsg(Port,"vc","TestPort")
If msg=NULL Then End
SendRexxCommand msg,"open",#RXCOMM|#RXFF_RESULT
wait:WHILE GetMsg_(Port) <> msg:Wend ;Wait for reply to come
ClearRexxMsg msg                      ;Delete the Command string
                                      we sent
```

NOTE: ClearRexxMsg() is called automatically by RexxEvent()

so the need to call this yourself is removed unless you have not sent the RexxMsg to Arexx.

## 1.326 bum\_fillrexmsg

Statement: FillRexxMsg()

---

Syntax: FillRexxMsg rexxmsg,&FillStruct

Modes: Amiga

Description:

FillRexxMsg allows you to fill all 16 ARGSlots if necessary with either ArgStrings or numerical values depending on your requirement.

FillRexxMsg will only be used by those programmers wishing to do more advanced things with Arexx, including adding libraries to the ARexx library list, adding Hosts, Value Tokens etc. It is also needed to access Arexx using the #RXFUNC flag.

The arguments are a LONG Pointer to a rexxmsg.

The LONG address of a FillStruct NEWTYPE structure. This structure is defined in the Arexx.res and has the following form.

NEWTYPE.FillStruct

```
Flags.w          ;Flag block
Args0.l          ; argument block (ARG0-ARG15)
Args1.l          ; argument block (ARG0-ARG15)
Args2.l          ; argument block (ARG0-ARG15)
Args3.l          ; argument block (ARG0-ARG15)
```

---

```

    Args4.1          ; argument block (ARG0-ARG15)
    Args5.1          ; argument block (ARG0-ARG15)
    Args6.1          ; argument block (ARG0-ARG15)
    Args7.1          ; argument block (ARG0-ARG15)
    Args8.1          ; argument block (ARG0-ARG15)
    Args9.1          ; argument block (ARG0-ARG15)
    Args10.1         ; argument block (ARG0-ARG15)
    Args11.1         ; argument block (ARG0-ARG15)
    Args12.1         ; argument block (ARG0-ARG15)
    Args13.1         ; argument block (ARG0-ARG15)
    Args14.1         ; argument block (ARG0-ARG15)
    Args15.1         ; argument block (ARG0-ARG15)
    EndMark.1        ;End of the FillStruct
End NEWTYPE

```

The Args?.1 are the 16 slots that can possibly be filled ready for converting into the REXXMsg structure. The Flags.w is a WORD value representing the type of LONG word you are supplying for each ARGSLot (Arg?.1).

Each bit in the Flags WORD is representative of a single Args?.1, where a set bit represents a numerical value to be passed and a clear bit represents a string argument to be converted into a ArgString before installing in the REXXMsg. The Flags Value is easiest to supply as a binary number to make the bits visible and would look like this.

```
%000000000000000000 ;This represents that all Arguments are Strings.
```

```
%011000000000000000 ;This represent the second and third as being
                      integers.
```

FillREXXMsg expects to find the address of any strings in the Args?.1 slots so it is important to remember when filling a FillStruct that you must pass the string address and not the name of the string. This is accomplished using the '&' address of operand.

So to use FillREXXMsg we must do the following things in our program:

1. Allocate a FillStruct
2. Set the flags in the FillStruct\Flags.w
3. Fill the FillStruct with either integer values or the addresses of our string arguments.
4. Call FillREXXMsg with the LONG address of our rexxmsg and the LONG address of our FillStruct.

To accomplish this takes the following code:

```

;Allocate our FillStruct (called F)

DEFTYPE.FillStruct F

;assign some string arguments

T$="open":T1$="0123456789"

;Fill in our FillStruct with flags and (&) addresses of our
    strings

```

```

F\Flags= %001000000000000000,&T$, &T1$,4

;Third argument here is an integer (4).

Port.l=CreateMsgPort("host")
msg.l=CreateRexxMsg(Port,"vc","host")

FillRexxMsg msg,&F

;<-3 args see #RXFUNC

SendRexxCommand msg,"",#RXFUNC|#RXFF_RESULT|3

```

### 1.327 bum\_createargstring

Function: CreateArgString()

---

Syntax: ArgString.l=CreateArgString("this is a string")  
 Modes: Amiga

#### Description:

CreateArgString() builds an ARexx compatible ArgString structure around the provided string. All strings sent to, or received from ARexx are in the form of ArgStrings. See the TYPE REXXARG.

If all is well the return will be a LONG address of the ArgString structure. The pointer will actually point to the NULL terminated String with the remainder of the structure available at negative offsets.

```

arg.l=CreateArgString("this is a string")
IF arg=0 THEN Error_Routine{}:ENDIF
DeleteArgString arg

```

NOTE: An ArgString maybe used as a normal BB2 string variable by simple conversion using PEEK\$

i.e. msg\$=PEEK\$(arg) or perhaps NPRINT PEEK\$(arg)

NOTE: Most of the BB2 ARexx Functions call this themselves and there will be only limited need for you to access this function.

### 1.328 bum\_deleteargstring

Statement: DeleteArgString

---

Syntax: DeleteArgString ArgString  
 Modes: Amiga

#### Description:

DeleteArgString is designed to Delete ArgStrings allocated by either Blitz2 or ARexx in a system friendly way. It takes only one argument the

---

LONGWORD address of an ArgString as returned by CreateArgString().

```
arg.l=CreateArgString("this is a string")
  IF arg=0 THEN Error_Routine{}:ENDIF
DeleteArgString arg
```

NOTE: This function is also called automatically by most of the BB2 Arexx Functions that need it so you should only need to call this on rare occasions.

### 1.329 bum\_sendrexxcommand

Statement: SendRexxCommand

---

SendRexxCommand rexxmsg, "commandstring", #RXCOMM|#RXFF\_RESULT  
Modes: Amiga

#### Description:

SendRexxCommand is designed to fill and send a RexxMsg structure to ARexx inorder to get ARexx to do something on your behalf.

The arguments are as follows;

Rexxmsg is the LONGWORD address of a RexxMsg structure as returned by CreateRexxMsg().

Commandstring is the command string you wish to send to ARexx. This is a string as in "this is a string" and will vary depending on what you wish to do with ARexx. Normally this will be the name of an ARexx script file you wish to execute. ARexx will then look for the script by the name as well as the name with the exten added. (this is the exten you used when you created the RexxMsg structure using CreateRexxMsg()). This could also be a string file. That is a complete ARexx script in a single line.

ActionCodes are the flag values you use to tell ARexx what you want it to do with the commandstring you have supplied. The possible flags are as follows;

#### COMMAND (ACTION) CODES

The command codes that are currently implemented in the resident process are described below. Commands are listed by their mnemonic codes, followed by the valid modifier flags. The final code value is always the logical OR of the code value and all of the modifier flags selected. The command code is installed in the rm\_Action field of the message packet.

#### USAGE: RXADDCON

This code specifies an entry to be added to the Clip List. Parameter slot ARGO points to the name string, slot ARG1 points to the value string, and slot ARG2 contains the length of the value string.

The name and value arguments do not need to be argstrings, but can be just pointers to storage areas. The name should be a null-terminated string, but the value can contain arbitrary data including nulls.

---

**USAGE: RXADDFH**

This action code specifies a function host to be added to the Library List. Parameter slot ARGO points to the (null-terminated) host name string, and slot ARG1 holds the search priority for the node. The search priority should be an integer between 100 and -100 inclusive; the remaining priority ranges are reserved for future extensions. If a node already exists with the same name, the packet is returned with a warning level error code.

Note that no test is made at this time as to whether the host port exists.

**USAGE: RXADDLIB**

This code specifies an entry to be added to the Library List. Parameter slot ARGO points to a null-terminated name string referring either to a function library or a function host. Slot ARG1 is the priority for the node and should be an integer between 100 and -100 inclusive; the remaining priority ranges are reserved for future extensions. Slot ARG2 contains the entry Point offset and slot ARG3 is the library version number. If a node already exists with the same name, the packet is returned with a warning level error code. Otherwise, a new entry is added and the library or host becomes available to ARexx programs. Note that no test is made at this time as to whether the library exists and can be opened.

**USAGE: RXCOMM [RXFF\_TOKEN] [RXFF\_STRING] [RXFF\_RESULT] [RXFF\_NOIO]**

Specifies a command-mode invocation of an ARexx program. Parameter slot ARGO must contain an argstring Pointer to the command string. The RXFF\_TOKEN flag specifies that the command line is to be tokenized before being passed to the invoked program. The RXFF\_STRING flag bit indicates that the command string is a "string file." Command invocations do not normally return result strings, but the RXFF\_RESULT flag can be set if the caller is prepared to handle the cleanup associated with a returned string. The RXFF\_NOIO modifier suppresses the inheritance of the host's input and output streams.

**USAGE: RXFUNC [RXFF\_RESULT] [RXFF\_STRING] [RXFF\_NOIO] argcount**

This command code specifies a function invocation. Parameter slot ARGO contains a pointer to the function name string, and slots ARG1 through ARG15 point to the argument strings, all of which must be passed as argstrings. The lower byte of the command code is the argument count; this count excludes the function name string itself. Function calls normally set the RXFF\_RESULT flag, but this is not mandatory. The RXFF\_STRING modifier indicates that the function name string is actually a "string file". The RXFF\_NOIO modifier suppresses the inheritance of the host's input and output streams.

**USAGE: RXREMCN**

This code requests that an entry be removed from the Clip List. Parameter slot ARGO points to the null-terminated name to be removed. The Clip List is searched for a node matching the supplied name, and if a



match is found the list node is removed and recycled. If no match is found the packet is returned with a warning error code.

#### USAGE:RXREMLIB

This command removes a Library List entry. Parameter slot ARGO points to the null terminated string specifying the library to be removed. The Library List is searched for a node matching the library name, and if a match is found the node is removed and released. If no match is found the packet is returned with a warning error code. The library node will not be removed if the library is currently being used by an ARexx program.

#### USAGE:RXCCLS

This code requests that the global tracing console be closed. The console window will be closed immediately unless one or more ARexx programs are waiting for input from the console. In this event, the window will be closed as soon as the active programs are no longer using it.

#### USAGE:RXCOPN

This command requests that the global tracing console be opened. Once the console is open, all active ARexx programs will divert their tracing output to the console. Tracing input (for interactive debugging) will also be diverted to the new console. Only one console can be opened; subsequent RXCOPN requests will be returned with a warning error message.

#### MODIFIER FLAGS

Command codes may include modifier flags to select various processing options. Modifier flags are specific to certain commands, and are ignored otherwise.

#### RXFF\_NOIO.

This modifier is used with the RXCOMM and RXFUNC command codes to suppress the automatic inheritance of the host's input and output streams.

#### RXFF\_NONRET.

Specifies that the message packet is to be recycled by the resident process rather than being returned to the sender. This implies that the sender doesn't care about whether the requested action succeeded, since the returned packet provides the only means of acknowledgement.

(RXFF\_NONRET MUST NOT BE USED AT ANY TIME)

#### RXFF\_RESULT.

This modifier is valid with the RXCOMM and RXFUNC commands, and requests that the called program return a result string. If the program EXITS (or RETURNS) with an expression, the expression result is returned to the caller as an argstring. This ArgString then becomes the callers

responsibility to release. This is automatically accomplished by using `GetResultString()`. It is therefore imperative that if you use `RXFF_RESULT` then you must use `GetResultString()` when the message packet is returned to you or you will incur a memory loss equal to the size of the `ArgString` Structure.

`RXFF_STRING`.

This modifier is valid with the `RXCOMM` and `RXFUNC` command codes. It indicates that the command or function argument (in slot `ARGO`) is a "string file" rather than a file name.

`RXFF_TOKEN`.

This flag is used with the `RXCOMM` code to request that the command string be completely tokenized before being passed to the invoked program. Programs invoked as commands normally have only a single argument string. The tokenization process uses "white space" to separate the tokens, except within quoted strings. Quoted strings can use either single or double quotes, and the end of the command string (a null character) is considered as an implicit closing quote.

EXAMPLES:

```
Port.l=OpenRexxPort("TestPort")
  If Port = NULL End:EndIf
msg.l>CreateRexxMsg(Port,"vc","TestPort")
  If msg=NULL End:EndIf
SendRexxCommand msg,"open",#RXCOMM|#RXFF_RESULT
```

### 1.330 `bum_replyrexmsg`

Statement: `ReplyRexxMsg`

---

Syntax: `ReplyRexxMsg rexxmsg,Result1,Result2,"ResultString"`

Modes: Amiga

Description:

When `ARexx` sends you a `RexxMsg` (Other than a reply to yours i.e. sending yours back to you with results) you must repl to the message before `ARexx` will continue or free that memory associated with that `RexxMsg`. `ReplyRexxMsg` accomplishes this for you. `ReplyRexxMsg` also will only reply to message that requires a reply so you do not have to include message checking routines in your source simply call `ReplyRexxMsg` on every message you receive whether it is a command or not.

The arguments are;

`rexxmsg` is the `LONGWORD` address of the `RexxMsg` `ARexx` sent you as returned by `GetMsg_(Port)`.

`Result1` is 0 or a severity value if there was an error.

`Result2` is 0 or an `Arexx` error number if there was an error processing the command that was contained in the message.

---

ResultString is the result string to be sent back to Arexx. This will only be sent if Arexx requested one and Result1 and 2 are 0.

```
ReplyRexxMsg rexxmsg,0,0,"THE RETURNED MESSAGE"
```

### 1.331 bum\_getrexxresult

Function: GetRexxResult()

Syntax: Result.l=GetRexxResult(rexxmsg,ResultNum)

Modes: Amiga

Description:

GetRexxResult extracts either of the two result numbers from the RexxMsg structure. Care must be taken with this Function to ascertain whether you are dealing with error codes or a ResultString address. Basically if result 1 is zero then result 2 will either be zero or contain a ArgString pointer to the ResultString. This should then be obtained using GetResultString().

The arguments to GetRexxResult are;

rexxmsg is the LONGWORD address of a RexxMsg structure returned from ARExx.

ResultNum is either 1 or 2 depending on whether you wish to check result 1 or result 2.

```
;print the severity code if there was an error
```

```
NPrint GetRexxResult(msg,1)
```

```
;check for ResultString and get it if there is one
```

```
IF GetRexxResult(msg,1)=0
```

```
IF GetRexxResult(msg,2) THEN GetResultString(msg)
```

```
ENDIF
```

### 1.332 bum\_getrexxcommand

Function: GetRexxCommand()

Syntax: String\$=GetRexxCommand(msg,1)

Modes: Amiga

Description:

GetRexxCommand allows you access to all 16 ArgString slots in the given RexxMsg. Slot 1 contains the command string sent by ARExx in a command message so this allows you to extract the Command.

Arguments are:

rexmsg is a LONGWORD address of the RexxMsg structure as returned by  
RexxEvent()

ARGNum is an integer from 1 to 16 specifying the ArgString Slot you wish  
to get an ArgString from.

BEWARE YOU MUST KNOW THAT THERE IS AN ARGSTRING THERE.

### 1.333 bum\_getresultstring

Function: GetResultString()

Syntax: String\$=GetResultString(rexmsg)

Modes: Amiga

Description:

GetResultString allows you to extract the result string returned to you  
by ARexx after it has completed the action you requested. ARexx will  
only send back a result string if you asked for one (using the  
ActionCodes) and the requested action was successful.

```
;check for ResultString and get it if there is one
```

```
IF GetRexxResult(msg,1)=0
```

```
  IF GetRexxResult(msg,2) THEN GetResultString(msg)
```

```
ENDIF
```

NOTE: Do not attempt to DeleteArgString the result  
string returned by this function as the return is a string and not an  
ArgString pointer. BB2 will automatically delete this argstring for you.

### 1.334 bum\_wait

Statement: Wait

Syntax: Wait

Modes: Amiga

Description:

Wait halts all program execution until an event occurs that the program  
is interested in. Any intuition event such as clicking on a gadget in  
a window will start program execution again.

A message arriving at a MsgPort will also start program execution again.  
So you may use Wait to wait for input from any source including messages  
from ARexx to your program.

Wait should always be paired with EVENT if you need to consider  
intuition events in your event handler loop.

```
Repeat
```

---

```

Wait:rmsg.l=REXXEVENT(Port):ev.l=EVENT
IF IsRexxMsg(Rmsg) Process_Rexx_Messages{}:ENDIF
;
;
;Rest of normal intuition event loop statements case etc
;
Until ev =$200

```

### 1.335 bum\_rexxevent

Function: RxxEvent()

---

Syntax: Rmsg.l=RxxEvent(Port)

Modes: Amiga

Description:

RxxEvent is our Arexx Equivalent of EVENT(). It's purpose is to check the given Port to see if there is a message waiting there for us.

It should be called after a WAIT and will either return a NULL to us if there was no message or the LONG address of a RxxMsg Structure if there was a message waiting.

Multiple Arexx MsgPorts can be handled using separate calls to RxxEvent():

```
Wait:Rmsg1.l=RxxEvent(Port1):Rmsg2.l=RxxEvent(Port2):etc
```

RxxEvent also takes care of automatically clearing the rexxmsg if it is our message being returned to us.

The argument is the LONG address of a MsgPort as returned by CreateMsgPort().

EXAMPLES:

```

Repeat
    Wait:Rmsg.l=REXXEVENT(Port):ev.l=EVENT
    IF IsRexxMsg(Rmsg) Process_Rexx_Messages{}:ENDIF
    ;
    ;
    ;Rest of normal intuition event loop statements case etc
Until ev =$200

```

SEE ALSO: Wait() , CreateMsgPort()

### 1.336 bum\_isrexxmsg

Function: IsRxxMsg()

---

Syntax: IsRxxMsg(rexxmsg)

Modes: Amiga

---

**Description:**

IsRexxMsg tests the argument (a LONGWORD pointer hopefully to a message packet) to see if it is a RexxMsg Packet. If it is TRUE is returned (1) or FALSE if it is not (0).

```
Repeat
    Wait:Rmsg.l=REXXEVENT:ev.l=EVENT
    IF IsRexxMsg(Rmsg) Process_Rexx_Messages{}:ENDIF
    ;
    ;
;Rest of normal intuition event loop statements case etc
Until ev =$200
```

As the test is non destructive and extensive passing a NULL value or a LONGWORD that does not point to a Message structure (Intuition or Arexx) will safely return as FALSE.

SEE ALSO: CreateRexxMsg() , GetMsg\_()

**1.337 bum\_rexxerror**

Function: RxxError()

Syntax: ErrorString\$=RxxError(ErrorCode)

Modes: Amiga

**Description:**

RxxError converts a numerical error code such as you would get from GetRxxResult(msg,2) into an understandable string error message. If the ErrorCode is not known to ARxx a string stating so is returned this ensures that this function will always succeed.

```
NPRINT RxxError(5)
```

SEE ALSO: GetRxxResult()

**1.338 bum\_agahandling****AGA PALETTE HANDLING**

Blitz 2's palette object has (again) changed. Palette objects are now capable of containing AGA compatible 24 bit colours.

**AGA Commands:**

|           |          |
|-----------|----------|
| AGARGB    | AGAGreen |
| AGAPalRGB | AGABlue  |
| AGARed    |          |

NEW SCREENFLAGS

3.0 BITMAP HANDLING

## NEW GADGET HANDLING

The new palette objects look like this:

```

NEWTTYPE.rgbcomp
  _red.l    ;left justified red component.
  _green.l  ;left justified green component.
  _blue.l   ;left justified blue component.
End NEWTYPE

NEWTTYPE.palettedata
  _numcols.w      ; same as palette/_numcols.
  _zero.w         ; for compatibility with graphics lib
                  ; LoadRGB32.
  _rgbs.rgbcomp[256] ;256 is the max the amount will actually
                  ;depend upon the highest palette entry.
  _zero2.l        ;for graphics lib too.
End NEWTYPE

```

This is the actual object return by Addr Palette(n):

```

NEWTTYPE.palette
  _*data.palettedata ; 00: NULL if no palette present
                  ;     else a pointer to palettedata.
  _numcols.w         ; 04: num cols present in palettedata.
                  ;     below is colour cycling info.
  _lowcol.w          ; 06: low colour for cycle range.
  _hicol.w           ; 08: high colour for cycle range.
  _speed.w           ; 10: speed of cycle : 16384 = max speed
                  ;     sign indicates cycling direction.
  _var.w             ; 12: cvariable speed is added to.
                  ;
                  ; more possible cycling entries....
                  ;
                  ; 128: sizeof.
End NEWTYPE

```

Now for the new AGA functions added to Blitz 2...these will all generate a runtime error if used on a non-AGA Amiga....

### 1.339 bum\_agargb

Statement: AGARGB

Syntax: AGARGB Colour Register,Red,Green,Blue

Modes: Amiga

Description:

The AGARGB command is the AGA equivalent of the RGB command. The 'Red', 'Green' and 'Blue' parameters must be in the range 0 through 255, while 'Colour Register' is limited to the number of colours available on the currently used screen.

Example:

```
;
; AGA test
;

Screen 0,0,0,1280,512,8,$8024,"SUPER HIRES 256 COLORS",1,2

ScreensBitMap 0,0

For i=0 To 255
  AGARGB i,i/2,i/3,i      ;shades of purple
  Circle 640,256,i*2,i,i  ;big SMOOTH circles
Next

MouseWait
```

### 1.340 bum\_agapalrgb

Statement: AGAPalRGB

---

Syntax: AGAPalRGB Palette#,Colour Register,Red,Green,Blue  
Modes: Amiga

Description:

The AGAPalRGB command is the AGA equivalent of the PalRGB command. AGAPalRGB allows you to set an individual colour register within a palette object. This command only sets up an entry in a palette object, and will not alter the actual screen palette until a 'Use Palette' is executed.

### 1.341 bum\_agared

Function: AGARed

---

Syntax: AGARed(colour register)  
Modes: Amiga

Description:

The AGARed function returns the red component of the specified colour register within the currently used screen. The returned value will be within the range 0 (being no red) through 255 (being full red).

### 1.342 bum\_agagreen

Function: AGAGreen

---

Syntax: AGAGreen(colour register)  
Modes: Amiga

Description:

The AGAGreen function returns the green component of the specified

---



colour register within the currently used screen. The returned value will be within the range 0 (being no green) through 255 (being full green).

### 1.343 bum\_agablue

Function: AGABlue

Syntax: AGABlue(colour register)

Modes: Amiga

Description:

The AGABlue function returns the blue component of the specified colour register within the currently used screen. The returned value will be within the range 0 (being no blue) through 255 (being full blue).

### 1.344 bum\_newscreenflags

#### NEW SCREEN FLAGS

The superhires viewmode flag \$20 is now acceptable, but should always be used in conjunction with the standard hires flag of \$8000.

The depth of a screen may now be specified up to 8 bitplanes (256 colours) deep (if you've got an AGA machine!). Here's how you would go about opening a super-hires, 256 colour screen:

```
Screen 0,0,0,1280,256,8,$8020,"MyScreen",1,0
```

### 1.345 bum\_30bitmaphandling

#### 3.0 BITMAP HANDLING

Blitz 2's Bitmap object has been upgraded to allow for interleaved bitmaps:

```
NewType.Bitmap
_  ebwidth[0]      ;00: for compatability.
_  linemod.w       ;00: value to get from one scanline to next.
_  height.w        ;02: currently pixel height - but open to commodore
_                  ;    'enhancement'.
_  depth.w         ;04: number of bitplanes.
_  pad.b[2]        ;06: nothing.
_  data.l[8]       ;08: actual bitplane pointers.
_  pad2.b[12]      ;40: zilch.
_  flags.w         ;0=normal bitmap, <0=interleaved.
_  bitplanemod.w   ;value to get from one bitplane to next. MAY BE 0!
_  xclip.w         ;pixel width for render clipping
_  yclip.w         ;pixel height for render clipping
_  cclip.w         ;number of colours available on bitmap ( = 2^_depth)
```

```

_   isreal.w           ;0=no bitmap here, <0=blitz created bitmap,
                        >0=borrowed
                        ;64: sizeof
End NEWTYPE

```

Also, many Blitz2 bitmap related commands have been altered to take this new object into account.

## 1.346 bum\_newgadgethandling

### NEW GADGET HANDLING

A new bit, bit 9, in the 'Flags' parameter of the 'TextGadget' and 'ShapeGadget' commands allow you to create mutually exclusive radio button type gadgets. These gadgets DO NOT require Kickstart 2.0 to operate!

Here is an example of setting up some radio button style text gadgets:

```

TextGadget 0,16,16,512,1,"OPTION 1":Toggle 0,1,On
TextGadget 0,16,32,512,2,"OPTION 2"
TextGadget 0,16,48,512,3,"OPTION 3"

```

The new 'ButtonGroup' command allows you to specify which 'group' a series of button gadgets belong to. See 'ButtonGadget' below.

Note that if you are using button gadgets, you SHOULD really toggle ONE of the gadgets 'On' before giving the gadgetlist to a window - as in the example above.

Text Gadgets may now be used to create 'cycling' gadgets. Again, these gadgets DO NOT require kickstart 2.0 to work.

If you create a text gadget which contains the '|' character in the gadget's text, Blitz 2 will recognize this as a 'cycling' gadget, using the '|' character to separate the options - like this:

```
TextGadget 0,16,16,0,1," HELLO |GOODBYE| SEEYA |"
```

Now, each time this gadget is clicked on, the gadgets text will cycle through 'Hello', 'GOODBYE' and 'SEEYA'. Note that each option is spaced out to be of equal length. This feature should not be used with a GadgetJam mode of 0.

### NEW GADGETS EXAMPLE

### NEW GADGET COMMANDS:

```

GagetStatus
ButtonGroup
ButtonId
Enable
Disable
SetGadgetStatus

```

### 1.347 bum\_gadgetstatus

Function: GadgetStatus

---

Syntax: GadgetStatus(GadgetList#,Id)

Modes: Amiga

Description:

GadgetStatus may be used to determine the status of the specified gadget. In the case of 'toggle' type gadget, GadgetStatus will return true (-1) if the gadget is currently on, or false (0) if the gadget is currently off.

In the case of a cycling text gadget, GadgetStatus will return a value of 1 or greater representing the currently displayed text within the gadget.

### 1.348 bum\_buttongroup

Statement: ButtonGroup

---

Syntax: ButtonGroup Group

Modes: Amiga

Description:

ButtonGroup allows you to determine which 'group' a number of button type gadgets belong to. Following the execution of ButtonGroup, any button gadgets created will be identified as belonging to the specified group. The upshot of all this is that button gadgets are only mutually exclusive to other button gadgets within the same group.

'Group' must be a positive number greater than 0. Any button gadgets created before a 'ButtonGroup' command is executed will belong to group 1.

### 1.349 bum\_buttonid

Function: ButtonId

---

Syntax: ButtonId(GadgetList#,ButtonGroup)

Modes: Amiga

Description:

ButtonId may be used to determine which gadget within a group of button type gadgets is currently selected. The value returned will be the GadgetId of the button gadget currently selected.

### 1.350 bum\_enabledisable

Statements: Enable & Disable

---

Syntax: Enable GadgetList#,Id & Disable GadgetList#,Id  
 Modes: Amiga

Description:

A gadget when disabled is covered by a "mesh" and can not be accessed by the user. The commands Enable and Disable allow the programmer to access this feature of Intuition.

### 1.351 bum\_setgadgetstatus

Statement: SetGadgetStatus

---

Syntax: SetGadgetStatus GadgetList#,Id,Value  
 Modes: Amiga

Description:

SetGadgetStatus is used to set a cycling text gadget to a particular value, once set ReDraw should be used to refresh the gadget to reflect it's new value.

### 1.352 bum\_newgadgetsexample

NEW GADGETS EXAMPLE:

```

;
; new gadget types
;
WBStartup:FindScreen 0      ;open on workbench
TextGadget 0,32,14,0,0,"CYCLE 1|CYCLE 2|CYCLE 3"

ButtonGroup 1 ;first group of radio buttons follows
For i=1 To 5
  TextGadget 0,32,14+i*14,512,i,"CHANNEL #"+Str$(i)
Next

ButtonGroup 2 ;second group of radio buttons follows
For i=6 To 10
  TextGadget 0,32,14+i*14,512,i,"BAND #"+Str$(i)
Next
Window 0,20,20,160,180,$1008,"GADGET TEST",1,2,0

Repeat                ;wait until close window gadget hit
  ev.l=WaitEvent
Until ev=$200

```

### 1.353 bum\_datetimecommands

Available commands:

SystemDate  
Date\$  
NumDays  
DateFormat  
Days  
Months  
Years  
WeekDay  
Hours  
Mins  
Secs

### 1.354 bum\_systemdate

Function: SystemDate

---

Syntax: SystemDate

Modes: Amiga

Description:

SystemDate returns the system date as the number of days passed since 1/1/1978.

Example:

```
;
; date/time test
;

Dim d$(6):Restore daynames:For i=0 To 6:Read d$(i):Next
Dim m$(12):Restore monthnames:For i=1 To 12:Read m$(i):Next

NPrint Date$(SystemDate)
NPrint d$(WeekDay)," ",Days," ",m$(Months)," ",Years
NPrint Hours,":",Mins,":",Secs
NPrint "press mouse to quit"
MouseWait

daynames:
  Data$ SUNDAY,MONDAY,TUESDAY,WEDNESDAY
  Data$ THURSDAY,FRIDAY,SATURDAY
monthnames:
  Data$ JAN,FEB,MAR,APR,MAY,JUN,JUL,AUG,SEP,OCT,NOV,DEC
```

### 1.355 bum\_date\$

Function: Date\$

---

Syntax: Date\$ (days)

---

Modes: Amiga

Description:

Date\$ converts the format returned by SystemDate (days passed since 1/1/1978) into a string format of dd/mm/yyyy or mm/dd/yyyy depending on the dateformat (defaults to 0).

### 1.356 bum\_numdays

Function: NumDays

---

Syntax: NumDays (date\$)

Modes: Amiga

Description:

Numdays converts a Date\$ in the above format to the day count format, where numdays is the number of days since 1/1/1978.

### 1.357 bum\_dateformat

Statement: DateFormat

---

Syntax: DateFormat format# ; 0 or 1

Modes: Amiga

Description:

DateFormat configures the way both date\$ and numdays treat a string representation of the date: 0=dd/mm/yyyy and 1=mm/dd/yyyy

### 1.358 bum\_days

Functions: Days Months Years & WeekDay

---

Syntax: Days Months Years & WeekDay

Modes: Amiga

Description:

Days Months and Years each return the particular value relevant to the last call to SystemDate. They are most useful for when the program needs to format the output of the date other than that produced by date\$. WeekDay returns which day of the week it is with Sunday=0 through to Saturday=6.

### 1.359 bum\_hoursminssecs

Functions: Hours Mins & Secs

---

Syntax: Hours Mins & Secs

Modes: Amiga

Description:

Hours, Mins and Secs return the time of day when SystemDate was last called.

## 1.360 bum\_environments

New Environment commands:

WBWidth  
WBHeight  
WBDepth  
WBViewMode  
Processor  
ExecVersion

Added in BUM #4

## 1.361 bum\_wbwidth

Functions: WBWidth Height Depth & ViewMode

---

Syntax: WBWidth, WBHeight, WBDepth & WBViewMode

Modes: Amiga

Description:

The functions WBWidth, WBHeight, WBDepth & WBViewMode return the width, height, depth & viewmode of the current WorkBench screen as configured by preferences.

## 1.362 bum\_processor

Functions: Processor & ExecVersion

---

Syntax: Processor & ExecVersion

Modes: Amiga

Description:

The two functions Processor & ExecVersion return the relevant information about the system the program is running on. The values returned are as follows:

| ExecVersion | OS Release | Processor | Part# |
|-------------|------------|-----------|-------|
| 33          | 1.2        | 0         | 68000 |

---

|     |  |     |   |  |       |
|-----|--|-----|---|--|-------|
| 34? |  | 1.3 | 1 |  | 68010 |
| 36  |  | 2.0 | 2 |  | 68020 |
| 39  |  | 3.0 | 3 |  | 68030 |
|     |  |     | 4 |  | 68040 |

### 1.363 bum\_newdrawingcommands

New drawing commands included in BUM #4:

Poly  
Polyf  
BitPlanesBitMap  
ClipBlit

### 1.364 bum\_polypolyf

Statement: Poly & Polyf

Syntax: Poly numpoints,\*coords.w,color  
Polyf numpoints,\*coords.w,color[,color2]

Modes: Amiga/Blitz

Description:

Poly & Polyf are bitmap based commands such as Box and Line. They draw polygons (unfilled and filled respectively) using coordinates from an array or newtype of words. Polyf has an optional parameter color2, if used this colour will be used if the coordinates are listed in anti-clockwise order, useful for 3D type applications. If color2= -1 then the polygon is not drawn if the vertices are listed in anti-clockwise order.

Example:

```

NEWTYPE .tri:x0:w:y0:x1:y1:x2:y2:End NEWTYPE
BLITZ
BitMap 0,320,256,3
Slice 0,44,3:Show 0
While Joyb(0)=0
    a.tri\x0=Rnd(320),Rnd(256),Rnd(320),Rnd(256),Rnd(320),Rnd(256)
    Polyf 3,a,1+Rnd(7)
Wend

```

### 1.365 bum\_bitplanesbitmap

Statement: BitPlanesBitMap

Syntax: BitPlanesBitMap SrcBitMap, DestBitMap, PlanePick

Modes: Amiga/Blitz

Description:



BitPlanesBitMap creates a 'dummy' bitmap from the SrcBitMap with only the bitplanes specified by the PlanePick mask. This is useful for shadow effects etc. where blitting speed can be speed up because of the fewer bitplanes involved

### 1.366 bum\_clipblit

Statement: ClipBlit

---

Syntax: ClipBlit Shape#,X,Y

Modes: Amiga/Blitz

Description:

ClipBlit is the same as the Blit command except ClipBlit will clip the shape to the inside of the used bitmap, all blit commands in Blitz2 are due to be expanded with this feature.

### 1.367 bum\_windowlibadd

Window Library Additions

The Commands:

Window  
 PositionSuperBitmap  
 GetSuperBitmap  
 PutSuperBitmap  
 WTitle  
 CloseWindow  
 WPrintScroll  
 WBlit  
 BitMapToWindow  
 EventCode  
 EventQualifier

### 1.368 bum\_window

Statement: Window

---

Syntax: Window Window#,x,y,width,height,flags,title\$,dpen,bpen[,gadgetlist#[,bitmap#]]

The Window library has been extended to handle super bitmap windows. Super-BitMap windows allow the window to have it's own bitmap which can actually be larger than the window. The two main benefits of this feature are the window's ability to refresh itself and the ability to scroll around a large area "inside" the bitmap.

To attach a BitMap to a Window set the SuperBitMap flag in the flags field and include the BitMap# to be attached.

---

### 1.369 bum\_positionsuperbitmap

Statement: PositionSuperBitMap

---

Syntax: PositionSuperBitMap x,y

PositionSuperBitMap is used to display a certain area of the bitmap in a super bitmap window.

Example:

```

;
; super bitmap example
;

;create large bimap for our superbitmap window

width=320:height=200
BitMap 0,width,height,2
Circlef 160,100,160,100,1 : Box 0,0,width-1,height-1,3

FindScreen 0

;two sliders for the borders (see new gadget flags next page)

PropGadget 0,3,-8,$18000+4+8+64,1,-20,8
PropGadget 0,-14,10,$11000+2+16+128,2,12,-20

;reporting of mousemoves means we can track the propgadget as it is
moved

AddIDCMP $10
SizeLimits 32,32,width+22,height+20
Window 0,0,0,100,100,$1489,"HELLO",1,2,0,0
Gosub drawsuper
Repeat
    ev.l=WaitEvent
    If ev=2 Then Gosub dosize
    If ev=$20 Then Gosub domove
Until ev=$200
End

dosize:
    SetHProp 0,1,posx/width,InnerWidth/width
    SetVProp 0,2,psy/height,InnerHeight/height
    Redraw 0,1:Redraw 0,2:Goto drawsuper

domove:
    Repeat:Gosub drawsuper:Until WaitEvent<>$10:Return

drawsuper:
    ww=width-InnerWidth:hh=height-InnerHeight
    posX=QLimit (HPropPot (0,1) * (ww+1) , 0, ww)
    psy=QLimit (VPropPot (0,2) * (hh+1) , 0, hh)
    PositionSuperBitMap posX,psy
Return

```

---

### 1.370 bum\_getputsuperbitmap

Statement: GetSuperBitMap & PutSuperBitMap

---

Syntax: GetSuperBitMap & PutSuperBitMap

After rendering changes to a superbitmap window the bitmap attached can also be updated with the GetSuperBitMap. After rendering changes to a bitmap the superbitmap window can be refreshed with the PutSuperBitMap command. Both commands work with the currently used window.

### 1.371 bum\_wtitle

Statement: WTitle

---

Syntax: WTitle windowtitle\$,screentitle\$

WTitle is used to alter both the current window's title bar and it's screens title bar. Useful for displaying important stats such as program status etc.

### 1.372 bum\_closewindow

Statement: CloseWindow

---

Syntax: CloseWindow Window#

CloseWindow has been added for convenience. Same as Free Window but a little more intuitive (added for those that have complained about such matters).

### 1.373 bum\_wprintscroll

Statement: WPrintScroll

---

Syntax: WPrintScroll

WPrintScroll will scroll the current window upwards if the text cursor is below the bottom of the window and adjust the cursor accordingly. Presently WPrintScroll only works with windows opened with the gimme00 flag set (#gimmezerozero=\$400).

### 1.374 bum\_wblit

Statement: WBlit

---

Syntax: WBlit Shape#,x,y

WBlit can be used to blit any shape to the current window. Completely system friendly this command will completely clip the shape to fit inside the visible part of the window. Use GimmeZeroZero windows for clean clipping when the window has title/sizing gadgets.

### 1.375 bum\_bitmaptowindow

Statement: BitMaptoWindow

---

Syntax: BitMaptoWindow Bitmap#,Window#[,srcx,srcy,destx,desty,wid,height]

BitMaptoWindow will copy a bitmap to a window in an operating system friendly manner (what do you expect). The main use of such a command is for programs which use the raw bitmap commands such as the 2D and Blit libraries for rendering bitmaps quickly but require a windowing environment for the user inyerface.

### 1.376 bum\_eventcq

Functions: EventCode & EventQualifier

---

Syntax: EventCode & EventQualifier

EventCode returns the actual code of the last Event received by your program, EventQualifier returns the contents of the Qualifier field. Of use with the new GadTools library and some other low level event handling requirements.

### 1.377 bum\_gadgetadd

Gadget Library Additions

---

Five new flags have been added when defining gadgets in Blitz2. The first four are for attaching the gadget to one of the windows borders, the GZZGADGET flag is for attaching the gadget to the "outer" rastport/layer of a gimme zero zero window.

|               |         |
|---------------|---------|
| #RIGHTBORDER  | \$1000  |
| #LEFTBORDER   | \$2000  |
| #TOPBORDER    | \$4000  |
| #BOTTOMBORDER | \$8000  |
| #GZZGADGET    | \$10000 |

PropGadgets have been upgraded to take advantage of the 2.0 "newlook" when/if available.

---

### 1.378 bum\_toggle

Statement: Toggle

---

Syntax: Toggle GadgetList#,Id [,On|Off]

The Toggle command in the gadget library has been extended so it will actually toggle a gadgets status if the no On|Off parameter is missing.

### 1.379 bum\_screenlibadd

Screen Library Additions

New commands:

CloseScreen  
HideScreen  
BeepScreen  
MoveScreen  
ScreenTags

### 1.380 bum\_closescreen

Statement: CloseScreen

---

Syntax: CloseScreen Screen#

CloseScreen has been added for convenience. Same as Free Screen but a little more intuitive (especially for those that have complained about such matters (yes we care)).

### 1.381 bum\_hidescreen

Statement: HideScreen

---

Syntax: HideScreen Screen#

Move Screen to back of all Screens open in the system.

### 1.382 bum\_beepscreen

Statement: BeepScreen

---

Syntax: BeepScreen Screen#

Flash specified screen.

---

### 1.383 bum\_movescreen

Statement: MoveScreen

---

Syntax: MoveScreen Screen#,deltax,deltay

Move specified screen by specified amount. Good for system friendly special effects.

### 1.384 bum\_screentags

Statement: ScreenTags

---

Syntax: ScreenTags Screen#,Title\$ [&TagList] or [[,Tag,Data]...]

Full access to all the Amiga's new display resolutions is now available in Amiga mode by use of the Screen Tags command. The following tags are of most interest to Blitz2 programmers: (see autodocs)

```
#Left=$80000021
#Top=$80000022
#Width=$80000023
#Height=$80000024
#Depth=$80000025
#DetailPen=$80000026
#_BlockPen=$80000027
#Title=$80000028
#Colors=$80000029
#ErrorCode=$8000002A
#Font=$8000002B
#SysFont=$8000002C
#Type=$8000002D
#BitMap=$8000002E
#PubName=$8000002F
#PubSig=$80000030
#PubTask=$80000031
#DisplayID=$80000032
#DClip=$80000033
#Overscan=$80000034
#Obsoleted1=$80000035

#ShowTitle=$80000036
#Behind=$80000037
#_Quiet=$80000038
#AutoScroll=$80000039
#Pens=$8000003A
#FullPalette=$8000003B
#ColorMapEntries=$8000003C
#Parent=$8000003D
#Draggable=$8000003E
#Exclusive=$8000003F

#SharePens=$80000040
#BackFill=$80000041
```

---

```

#_Interleaved=$800000042
#Colors32=$800000043
#VideoControl=$800000044
#FrontChild=$800000045
#BackChild=$800000046
#LikeWorkbench=$800000047
#Reserved=$800000048

;
; open super wide screen with overscan set for smooth horizontal scroll
; for 2.0 and above with amigalibs.res in resident
;

#_BitMap=$80000002E:#_Overscan=$800000034:#_Width=$800000023:
#_Height=$800000024

BitMap 0,1280,512,2:Circlef 320,256,256,1

ScreenTags 0,"TEST",#_BitMap,Addr BitMap(0),#_Overscan,1,#_Width,640,
           #_Height,512

*vp.ViewPort=ViewPort(0)

While Joyb(0)=0
    VWait
    *vp\DxOffset=-SMouseX,-SMouseY
    ScrollVPort_ *vp
Wend

```

## 1.385 bum\_palettelibadd

Palette Library Additions@{fg text}

The Palette library has been modified in BUM5 for two reasons. Firstly, it was impossible to perform custom fades using two palettes as the Use Palette command affected the current Slice or Screen. Also with the advent of the Display library the extra properties of the Use Palette command (copy colors to current Slice or Screen) became unwanted.

New commands:

```

ShowPalette
NewPaletteMode

```

The ShowPalette command has been added to replace the above functionality removed from the Use Palette command. Also, for compatability reasons NewPaletteMode On is used for enabling the above modifications (default is off).

## 1.386 bum\_showpalette

Statement: ShowPalette

---

Syntax: ShowPalette Palette#

ShowPalette replaces Use Palette for copying a palette's colours to the current Screen or Slice.

### 1.387 bum\_newpalettemode

Statement: NewPaletteMode

---

Syntax: NewPaletteMode On|Off

The NewPaletteMode flag has been added for compatibility with older Blitz2 programs. By setting NewPaletteMode to On the Use Palette command merely makes the specified palette the current object and does not try to copy the colour information to the current Screen or Slice.

### 1.388 bum\_newdisplaylibrary

The New Display Library (#displaylib=143)

The new display library is an alternative to the slice library. Instead of extending the slice library for AGA support a completely new display library has been developed.

Besides support for extended sprites, super hires scrolling and 8 bitplane displays a more modular method of creating displays has been implemented with the use of CopLists. CopLists need only be initialised once at the start of the program. Displays can then be created using any combination of CopLists and most importantly the CreateDisplay command does not allocate any memory avoiding any memory fragmenting problems. The new display library is for non-AGA displays also.

Display Library Commands:

|               |                 |
|---------------|-----------------|
| InitCopList   | DisplayPalette  |
| CreateDisplay | DisplayControls |
| DisplayBitmap | DisplayAdjust   |
| DisplaySprite |                 |

### 1.389 bum\_initcoplist

Statement: InitCopList

---

Syntax: InitCopList CopList#, ypos, height, type, sprites, colors, customs[, widthadjust]

InitCopList is used to create a CopList for use with the CreateDisplay

---



command. The ypos, height parameters define the section of screen. Sprites, colors and customs will allocate instructions for that many sprites (always=8!) colors (yes, as many as 256!) and custom copper instructions (to be used by the new DisplayFX library currently in development).

The widthadjust parameter is currently not implemented, for display widths other than standard see the DisplayAdjust command. The following constants make up the type parameter, add the number of bitplanes to the total to make up the type parameter.

```
#smoothscroll=$10    #dualplayfield=$20  #extrahalfbrite=$40  #ham=$80
#lores=$000          #hires=$100        #super=$200
#loressprites=$400   #hiressprites=$800  #supersprites=$c00
#fmode0=$0000        #fmodel=$1000      #fmode2=$2000        #fmode3=$3000
```

For displays on non-AGA machines only #fmode0 and #loressprites are allowed. More documentation, examples and fixes will be published soon for creating displays.

### 1.390 bum\_createdisplay

Statement: CreateDisplay

---

Syntax: CreateDisplay CopList#[,CopList#..]

CreateDisplay is used to setup a new screen display with the new display library. Any number of CopLists can be passed to CreateDisplay although at present they must be in order of vertical position and not overlap. CreateDisplay then links the CopLists together using internal pointers, bitmaps, colours and sprites attached to coplists are not affected.

### 1.391 bum\_displaybitmap

Statement: DisplayBitMap

---

Syntax: DisplayBitMap CopList#,bmap[,x,y] [,bmap[,x,y]]

The DisplayBitMap command is similar in usage to the slice libraries' show commands. Instead of different commands for front and back playfields and smooth scroll options there is only the one DisplayBitMap command with various parameter options. With AGA machines, the x positioning of lores and hires coplists uses the fractional part of the x parameter for super smooth scrolling. The CopList must be initialised with the smooth scrolling flag set if the x,y parameters are used, same goes for dualplayfield.

### 1.392 bum\_displaysprite

Statement: DisplaySprite

---

Syntax: DisplaySprite CopList#,Sprite#,X,Y,Sprite Channel

DisplaySprite is similar to the slice libraries ShowSprite command with the added advantage of super hires positioning and extra wide sprite handling.

See also SpriteMode .

## 1.393 bum\_displaypalette

Statement: DisplayPalette

---

Syntax: DisplayPalette CopList#,Palette# [,coloroffset]

DisplayPalette copies colour information from a Palette to the CopList specified.

## 1.394 bum\_displaycontrols

Statement: DisplayControls

---

Syntax: DisplayControls CopList#,BPLCON2,BPLCON3,BPLCON4

DisplayControls allows access to the more remote options available in the Amiga's display system. The following are the most important bits from these registers (still unpublished by Commodore!\*())@GYU&^)

| Bit | BPLCON2                             | BPLCON3                                | BPLCON4                       |
|-----|-------------------------------------|--|-------------------------------|
| 15  | *<br>                               | BANK2 * active colour<br>  bank        | BPLAM7 xor with<br>  bitplans |
| 14  | ZDBPSEL2 which bitplane<br>  for ZD | BANK1 *<br>                            | BPLAM6 DMA for<br>  altering  |
| 13  | ZDBPSEL1<br>                        | BANK0 *<br>                            | BPLAM5 effective<br>  colour  |
| 12  | ZDBPSEL0<br>                        | PF2OF2 col-offset for<br>  playfield 2 | BPLAM4 look up<br>            |
| 11  | ZDBPEN makes above bp<br>  hit ZD   | PF2OF1<br>                             | BPLAM3<br>                    |
| 10  | ZDCTEN ZD is bit#15 of<br>  colour  | PF2OF0<br>                             | BPLAM2<br>                    |
| 09  | KILLEHB *<br>                       | LOCT * palette hi/lo<br>  nibble mode  | BPLAM1<br>                    |

---

|    |         |                             |           |                      |                         |
|----|---------|-----------------------------|-----------|----------------------|-------------------------|
| 08 | RDRAM=0 | *                           |           |                      | BPLAM0                  |
| 07 | SOGEN   | ! sync on green             | + SPRES1  | * sprites-resolution | ESPRM7 high order color |
| 06 | PF2PRI  | H playfield 1/2 priority    | SPRES0    | *                    | ESPRM6 offset for even  |
| 05 | PF2P2   | H playfield/sprite priority | BRDRBLANK | border is black      | ESPRM5 sprites          |
| 04 | PF2P1   |                             | BRDNTRAN  | border hits ZD       | ESPRM4                  |
| 03 | PF1P0   |                             |           |                      | OSPRM7 high order color |
| 02 | PF1P2   |                             | ZDCLCKEN  | ZD=14Mhz clock       | OSPRM6 offset for odd   |
| 01 | PF1P1   |                             | BRDSPRT   | sprites in borders!  | OSPRM5 sprites          |
| 00 | PF1P0   |                             | EXTBLKEN  | wo blank output1     | OSPRM4                  |

! - Don't touch

H - See standard hardware reference manual

\* - controlled by display library

ZD - any reference to ZD is only a guess (just sold my genlock)

### 1.395 bum\_displayadjust

Statement: DisplayAdjust

Syntax: DisplayAdjust CopList#,fetchwid,ddfstrt,ddfstop,diwstrt,diwstop

Temporary control of display registers until I get the widthadjust parameter working with InitCopList. Currently only standard width displays are available but you can modify the width manually (just stick a screwdriver in the back of your 1084) or with some knowledge of Commodore AGA circuitry.

Anyway, before I start going on about why they couldn't just give us byte per pixel instead of 8 darn bitplanes (CD32 to the rescue!) see the cover disk for more information...

### 1.396 bum\_newasllibrary

The New ASL Library (#myasllib=80)

Our policy until now has been that we would only place emphasis on 1.3 compatible commands unless of course they had to do with AGA. Then again I don't even have a LoadWB in my startup-sequence! So instead of complaining I spent an uncomfortable week adding the following 2.0 above specific commands to Blitz2.

And as for those with 1.3 and want new ROMS? BURN BABY BURN...

The commands:

```
ASLFileRequest
ASLFontRequest
ASLScreenRequest$
```

### 1.397 bum\_aslfilerequest\$

Function: ASLFileRequest\$

Syntax: ASLFileRequest\$ (Title\$,Pathname\$,Filename\$ [,Pattern\$]  
[,x,y,w,h] )

The ASL File Requester is nice. Except for the highlight bar being invisible on directories you get to use keyboard for everything, stick in a pattern\$ to hide certain files and of course you get what ever size you want. I made it call the Blitz2 file requester if the program is running under 1.3 (isn't that nice!). There is a fix that patches the ReqTools file requester but that doesn't have the date field.

I couldn't get the Save-Only tag or the "Create Directory" option working maybe next upgrade.

EXAMPLE:

```
MaxLen pa$=192
MaxLen fi$=192
```

```
FindScreen 0
```

```
f$=ASLFileRequest$("test",pa$,fi$,"#?.bb",0,0,640,256)
```

```
If f$
    NPrint f$
Else
    NPrint "failed"
EndIf
```

```
MouseWait
```

### 1.398 bum\_aslfontrequest

Function: ASLFontRequest

---

Syntax: ASLFontRequest (enable\_flags)

The ASL Font Requester is also pretty useful. The flags parameter enables the user to modify the following options:

#pen=1:#bckgrnd=2:#style=4:#drawmode=8:#fixsize=16

It doesn't seem to handle colour fonts, no keyboard shortcuts so perhaps patching ReqTools is an option for this one. The following code illustrates how a .fontinfo structure is created by a call to ASLFontRequest (just like programming in a high level language man!).

EXAMPLE:

```

NEWTTYPE .fontinfo
    name.s
    ysize.w
    style.b:flags.b
    pen1.b:pen2:drawmode:pad
End NEWTYPE

FindScreen 0

*f.fontinfo=ASLFontRequest(15)

If *f
    NPrint *f\name
    NPrint *f\ysize
    NPrint *f\pen1
    NPrint *f\pen2
    NPrint *f\drawmode
Else
    NPrint "cancelled"
EndIf

MouseWait

```

## 1.399 bum\_aslscreenrequest

Function: ASLScreenRequest

---

Syntax: ASLScreenRequest (enable\_flags)

Those who are just getting to grips with 2.0 and above will find this command makes your programs look really good, however I haven't got time to explain the difficulties of developing programs that work in all screen resolutions (what are ya?).

EXAMPLE:

#width=1:#height=2:#depth=4:#overscan=8:#scroll=16

---

```

NEWTTYPE .screeninfo
    id.l
    width.l
    height.l
    depth.w
    overscan.w
    autoscroll.w
    bmapwidth.l
    bmapheight.l
End NEWTYPE

FindScreen 0

*sc.screeninfo=ASLScreenRequest(31)

If *sc
    NPrint *sc\width," ",*sc\height," ",*sc\depth
Else
    NPrint "cancelled"
EndIf
MouseWait

```

## 1.400 bum\_newgadtoolslibrary

The New GadTools Library (#mygadtoolslib=141)

GadTools is a 2.0 and greater extension to the operating system that gives the Amiga programmer a few extra enhancements to create juicy user interfaces with. Instead of listing each as a separate command this issue I'll just add a brief description and a relevant taglist to each of the 12 gadgets.

The Commands:

|              |              |
|--------------|--------------|
| AttachGTList | GTBevelBox   |
| GTags        | GTChangeList |
| GTGadPtr     | GTSetAttrs   |

You are allowed both standard gadgets and GadTools ones in the same window, of course id clashes must be avoided and unlike standard gadgets, gadtools gadgets are attached to the Window after it is open with the AttachGTList command.

GTButton GTList#,id,x,y,w,h,Text\$,flags

Same as Blitz2's TextGadget but with the added flexibility of placing the label Text\$ above, below to the left or right of the button (see flags).

GTCheckBox GTList#,id,x,y,w,h,Text\$,flags

A box with a check mark that toggles on and off, best used for options that are either enabled or disabled.

GTCycle GTList#,id,x,y,w,h,Text\$,flags,Options\$

Used for offering the user a range of options, the options string should be a list of options separated by the | character eg. "HIRES } LORES } SUPERHIRES"

GTInteger GTList#,id,x,y,w,h,Text\$,flags,default

A string gadget that allows only numbers to be entered by the user.

GTListView GTList#,id,x,y,w,h,Text\$,flags,list()

The ListView gadget enables the user to scroll through a list of options. These options must be contained in a string field of a Blitz2 linked list. Currently this string field must be the second field, the first being a word type.

GTMX GTList#,id,x,y,w,h,Text\$,flags,Options\$

GTMX is an exclusive selection gadget , the Options\$ is the same as GTCycle in format, GadTools then displays all the options in a vertical list each with a hi-light beside them.

GTNumber GTList#,id,x,y,w,h,Text\$,flags,value

This is a readonly gadget (user cannot interact with it) used to display numbers.

GTPalette GTList#,id,x,y,w,h,Text\$,flags,depth

Creates a number of coloured boxes relating to a colour palette,

GTScroller GTList#,id,x,y,w,h,Text\$,flags,Visible>Total

A prop type gadget for the user to control an amount or level, is accompanied by a set of arrow gadgets.

GTSlider GTList#,id,x,y,w,h,Text\$,flags,Min,Max

Same as Scroller but for controlling the position of display inside a larger view.

GTString GTList#,id,x,y,w,h,Text\$,flags,MaxChars

A standard string type gadget

GTText GTList#,id,x,y,w,h,Text\$,flags,Display\$

A read only gadget (see GTNumber) for displaying text messages.

The parameters x,y,w,h refer to the gadgets position and size, the Text\$ is the label as referred to above. The flags field is made up of the following fields:

```
#_LEFT=1 ;positioning of the optional gadget label Text$
#_RIGHT=2
#_ABOVE=4
#_BELOW=8
```

```
#_IN=$10
#_High=$20      ;highlight
#_Disable=$40   ;turned off
#_Immediate=$80 ;activate on gadgetdown
#_BoolValue=$100 ;checkbox on
#_Scaled=$200   ;scale arrows for slider
#_Vertical=$400 ;make slider/scroller vertical
```

## 1.401 bum\_attachgtlist

Statement: AttachGTList

---

Syntax: AttachGTList GTList#,Window#

The AttachGTList command is used to attach a set of GadTools gadgets to a Window after it has been opened.

## 1.402 bum\_gtags

Statement: GTTags

---

Syntax: GTTags Tag,Value [,Tag,Value...]

The GTTags command can be used prior to initialisation of any of the 12 gadtools gadgets to preset any relevant Tag fields. The following are some useful Tags that can be used with GTTags:

```
#tag=$80080000
#GTCB_Checked=#tag+4      ; State of checkbox
#GTLV_Top=#tag+5          ; Top visible item in listview
#GTLV_ReadOnly=#tag+7     ; Set TRUE if listview is to be ReadOnly
#GTMX_Active=#tag+10      ; Active one in mx gadget
#GTTX_Text=#tag+11        ; Text to display
#GTNM_Number=#tag+13      ; Number to display
#GTCY_Active=#tag+15      ; The active one in the cycle gad
#GTPA_Color=#tag+17       ; Palette color
#GTPA_ColorOffset=#tag+18 ; First color to use in palette
#GTSC_Top=#tag+21         ; Top visible in scroller
#GTSC_Total=#tag+22       ; Total in scroller area
#GTSC_Visible=#tag+23     ; Number visible in scroller
#GTSL_Level=#tag+40       ; Slider level
#GTSL_MaxLevelLen=#tag+41 ; Max length of printed level
#GTSL_LevelFormat=#tag+42 ; * Format string for level
#GTSL_LevelPlace=#tag+43  ; * Where level should be placed
#GTLV_Selected=#tag+54    ; Set ordinal number of selected
#GTMX_Spacing=#tag+61     ; * Added to font height to
```

All of the above except for those marked \* can be set after initialisation of the Gadget using the GTSetAttrs command. The following is an example of creating a slider gadget with a numeric display:

```
f$="%21d" : GTTags #GTSLLevelFormat, &f$, #GTSLMaxLevelLen, 4
```

---



```
GTSlider 2,10,320,120,200,20,"GTSLIDER",2,0,10
```

### 1.403 bum\_gtgadptr

Function: GTGadPtr

---

Syntax: GTGadPtr (GTList#,id)

GTGadPtr returns the actual location of the specified GadTools gadget in memory.

### 1.404 bum\_gtbevelbox

Statement: GTBevelBox

---

Syntax: GTBevelBox GTList#,x,y,w,h,flags

GTBevelBox is the GadTools library equivalent of the Borders command and can be used to render frames and boxes in the currently used Window.

### 1.405 bum\_gtchangelist

Statement: GTChangeList

---

Syntax: GTChangeList GTList#,id [ ,List() ]

GTChangeList must be used whenever a List attached to a GTListView needs to be modified. Call GTChangeList without the List() parameter to free the List, modify it then reattach it with another call to GTChangeList this time using the List() parameter.

### 1.406 bum\_gtsetattrs

Statement: GTSetAttrs

---

Syntax: GTSetAttrs GTList#,id [,Tag,Value...]

GTSetAttrs can be used to modify the status of certain GadTools gadgets with the relevant Tags. See GTTags for more information on the use of Tags with the GadTools library.

### 1.407 bum\_printerlib

## PRINTER LIBRARY

This is a library for using the printer.device!!! There are only four commands included, but I think these are the most wanted ones...

The Commands:

CheckPrt  
PrtCommand  
PrtText  
HardCopy

### 1.408 bum\_checkprt

Statement: CheckPrt

---

Syntax: status.b=CheckPrt

Modes : AMIGA/BLITZ

Description:

Checks the state of the Printer and return it.

status: -1 = Printer Off  
          -3 = Printer Offline  
          -4 = Printer On

Bugs:

I had exculded this Routine, because it doesn' t worked 100%...I have now reincluded it and compiled with the newest version of the BB2 compiler...It seems that it now works 100%...

### 1.409 bum\_prtcommand

Statement: PrtCommand

---

Syntax: PrtCommand Command,Para1,Para2,Para3,Para4

Modes : AMIGA

Description:

Send a ESC-Sequence to the printer.

Command: Escape-Sequence

Para1 - Para 4: Parameters for ESC-Sequence

Beispiel: PrtCommand 6,0,0,0,0 ;Kursiv on  
          PrtCommand 7,0,0,0,0 ;Kursiv off

---

## 1.410 bum\_prttext

Statement: PrtText

---

Syntax: PrtText <STRING>

Mode : AMIGA

Description:

PrtText: Prints the text 'STRING' at your printer...  
 It's the same like WriteFile(0,"PRT:"), but why have the AMIGA  
 a own printer.device...  
 So I think we should use it, right?

## 1.411 bum\_hardcopy

Statement: Hardcopy

---

Syntax: Hardcopy ScreenPointer,X,Y,Width,Height,PrtWidth,PrtHeight,Flags

Mode : AMIGA

Description:

Prints the screen or a part of it at your printer.

ScreenPointer: Adress of the screen (Addr Screen(x))  
 X.....: \ Are the corners of the screen where we  
 Y.....: / want to start printing it to paper...  
 Width.....: Width of the screen part you want to print  
 Height.....: Height of the screen part you want to print  
 PrtWidth.....: Width of the print(on the paper)  
 PrtHeight.....: Height of the print(on the paper)  
 Flags.....: Printerflags...  
 Have a look to a documantation aout it, the most  
 importent(?) ones:

- \$40 - Centre graphic
- \$10 - Weidth= Maximum
- \$20 - Height = Maximum
- \$100,\$200,\$300,\$400 - Printing quality(\$400 = Heighest)

Bugs:

Hm, it seems that the flags are not 100% taken...I haven' t find out  
 why, but might be you do...I still working on it! But however, it  
 works..

BTW: This library is copyright 1992/93 by Andre Bergmann.  
 Use it on your own risk, I don' t take the responsibility for using  
 it! This source is PD, feel free to update it!  
 Please send me updates done by you and Bug Reports!

Andre Bergmann

---

Am Pannesbusch 39a  
42281 Wuppertal 2  
Germany  
Tel: 0049/0202/702606

## 1.412 bum\_consolelib

### CONSOLE LIBRARY

---

ConsoleLib (a little buggy yet):

OpenConsole  
PrintCon  
NPrintCon  
CloseConsole

## 1.413 bum\_openconsole

Command: OpenConsole

---

Syntax : OpenConsole Window#,Console#

Description:

Open a CON: Port for the window, so ANSI output is possible.

## 1.414 bum\_printcon

Command: PrintCon

---

Syntax: PrintCon Console#,Expression

Description:

Write text to window-console.

## 1.415 bum\_nprintcon

Command: NprintCon

---

Syntax: NPrintCon Console#,Expression

Description:

Write text to window-console, and add a Linefeed.

---

## 1.416 bum\_closeconsole

Command: CloseConsole

---

Syntax: CloseConsole Console#

Description:

Close the CON: Port, but NOT the window itself!

Note:

These command work if you use them only for ONE window...If you wanna use the CON's for more windows, so that object are use it doesn' t work anymore... Ya see, I need ya help, please...

## 1.417 bum\_crunchlib

CRUNCH LIBRARY

Available Commands:

Implode  
Deplode  
CrMDecrunch  
PPDecrunch

## 1.418 bum\_implode

Function: Implode

---

Syntax: Implode Error/CrunchedLen=Bufferadr,DataLen,?Callback

Description:

Crunch a buffer using the Imploder algorithm. The ?Callback could be a 0 for no own routine or a pointer to an own routine for display or abort checking. If the Imploder command jump to the callback in register d0 the current crunch position is presend. The callback itself have to return True for cont crunching or False for a break!

The command return the crunched buffer len or of course a break or an error. If a <0 is returned the callback returned a userbreak, a return of 0 means an error happens. Else the new buffer len is returned.

## 1.419 bum\_deplode

Function: Deplode

---

Syntax: Deplode Success=Startadr

Description:

---

Decrunch a Imploder-Crunched buffer. There is no need to give the crunched buffer len to the command, imploder handle this by itself. But be careful, if the allocated buffer hasn't enough space the program crash.

The buffer has to have a header like this:

| Type | Offset | Contents          | Function                     |
|------|--------|-------------------|------------------------------|
| LONG | 0      | "IMP!"            | To recongnize crunched files |
| LONG | 4      | Original Len      | Datalen before packing       |
| LONG | 8      | Crunched Len-\$32 | Datalen after packing        |

So \$a is the start of the datas...

The decrunch routine NEED this header to decrunch!!!  
Do memoryallocation for the buffer using a allocate for the  
Startadr+\$4 size.

## 1.420 bum\_crmdecrunch

Command: CrMDecrunch

Syntax: CrMDecrunch Bufferadr [,Destinationadr]

Description:

If the only parameter is the Bufferadr this routine works like the Deplode command, but decrunch a CrunchMania crunched file. If you use it with to parameters the decrunch will be done from Bufferadr to Destinationadr, so 2 buffers have to been allocated.

The header for CrunchMania files have to look like this:

| Type | Offset   | Contents                  | Function   |
|------|----------|---------------------------|--|
| LONG | 0        | "CrM!"/"CrM2"             | To recongnize crunched files.  |
| WORD | 4        | Minimum Security Distance | To savely decrunch Data when Source AND Dest is in the same Memoryblock. |
| LONG | 6        | Original Len              | Datalen before packing   |
| LONG | 10 (\$a) | Crunched Len              | Datalen after packing without header.                                    |

So at \$d is the data startadress.

This header is NEEDED for decrunching!

## 1.421 bum\_ppdecrunch

Command: PPDecrunch

---

Syntax: PPDecrunch Bufferadr,Bufferend,Destinationadr

Description:

This command decrunch a PowerPacker crunched file. PowerPacker need two buffers for decrunching. Also the lenght of the buffer must be given!

Sorry, I can' t find my PowerPacker archive where the header is descripted...Like Imploder and CrunchMania PowerPacker also support his own file header.

Please have a look at the PowerPacker(.library) documentation!

## 1.422 bum\_localelib

---

### LOCALE LIBRARY

---

Available commands:

IsLocale  
UseCatalog  
FreeCatalog  
GetLocaleStr

## 1.423 bum\_islocale

Function: IsLocale

---

Syntax: result=IsLocale

Description:

There is now way to check the ROM-Version of the Kickstart for locale presents. Both, OS 2.0 and 2.1 have the ROM-Version 37.175! So the command returns if the locale.library exists on the system.

## 1.424 bum\_usecatalog

Command: UseCatalog

---

Syntax: UseCatalog Catalogname

Description:

Opens the catalog for your programm. Might by your program is called BB2Program the catalog should be called BB2Program.catalog. But you're also able to open a catalog from an other program, like Term.catalog.

The catalog files are in an IFF format!!! Read the Commodore documentation of it...

---

## 1.425 bum\_freecatalog

Command: FreeCatalog

---

Syntax: FreeCatalog

Description:

Removes the catalog that you opened with UseCatalog.

## 1.426 bum\_getlocalestr

Function: GetLocaleStr

---

Syntax: GetLocaleStr #StringNumber,DefaultString\$

Description:

Read a string from the catalog that you opened with UseCatalog. You have to give a defaultstring to that command. If the asked string could be find in the catalog the default string will be returned. Else the string from the catalog will be returned.

## 1.427 bum\_requesterlibrary

REQUESTER LIBRARY

---

Available Commands:

Function: EasyRequest

---

Syntax: EasyRequest Result=EasyRequest ([#Window,]title\$,body\$,gtext\$)

Description:

A intuition system requester will be open. Optional you could give a window number. The title\$ is the displayed string in the top. body\$ is the displayed text in the requester, a Chr\$(10) means a linefeed.

gtext\$ is the text for the gadgets. Every gadgettext will be added by a '|'.  
'|'.

Examples: "Ok" will only display one gadget in the requester.

"Ok|Cancel" add two gadgets to it.

"1|2|3|4|5" five gadgets are displayed.

## 1.428 bum\_amigasupportlib

AMIGA SUPPORT LIBRARY

---



## Available Commands:

AllocMem  
FreeMem  
IsEven  
SearchString

**1.429 bum\_allocmem**

Function: AllocMem

---

Syntax: MemoryBlock=AllocMem(Size,Type)

Description:

Unlike calling Exec's AllocMem\_ command directly Blitz2 will automatically free any allocated memory when the program ends. Programmers are advised to use the InitBank command.

Flags that can be used with the memory type parameter are:

1=public ;fast is present  
2=chipmem  
65536=clear ;clears all memory allocated with 0's

**1.430 bum\_freemem**

Command: FreeMem

---

Syntax: FreeMem MemoryBlock,ByteSize  
(long) (long)

Description:

Deallocates memory obtained with AllocMem

**1.431 bum\_iseven**

Function: IsEven

---

Syntax: Result=IsEven(Expression)  
(bool) (byte,word,long)

Description:

Returns true if Expression is even. Of use when requesting a value from a user that MUST be even.

**1.432 bum\_searchstring**

Function: SearchString

---

Syntax:    result=SearchString(StringPointer,StartAddress,BlockLength)  
              (long)                          (&string)         (long)          (long)

Description:

Finds a string in the given memory block and returns its address.  
 Returns False otherwise.

### 1.433 bum\_elmorelib

BUM #6 contains almost all the PD commands of Elmore and some more.

DOS Elmore Library  
 Hardware Elmore Library  
 Math Elmore Library  
 Array Elmore Library  
 Sys Elmore Library  
 String Elmore Library  
 Library Programming

New in BUM7 :

Include Library

(For the uninitiated:)

NOTE ON FUNCTIONS, STATEMENTS and COMMANDS:

---

"FUNCTIONS" are Blitz2 tokens that require parameters in parentheses,  
 and return a value: n=ABS(m)

"STATEMENTS" are Blitz2 tokens that only perform an action but do not  
 return a value. Their arguments do not require parentheses:  
 PRINT "HELLO!"

"COMMANDS" are Blitz2 tokens that can be used as either a FUNCTION or  
 a STATEMENT, depending upon whether the arguments were in parentheses or  
 not.

[Function form:]  
 n=REQUEST("TITLE","SELECT YES OR NO","YES|NO")

[Statement form:]  
 REQUEST "TITLE","SELECT OK TO CONTINUE","OK"

### 1.434 bum\_elmoredos

DOS.ELMORE LIBRARY

---

|               |                |
|---------------|----------------|
| ChDir         | EntryHour      |
| PathLock      | EntryMins      |
| CopyFile      | EntrySecs      |
| SetCopyBuffer | EntryComment\$ |
| NameFile      | AnalyzeDisk    |
| MakeDir       | DiskUnit       |
| MoreEntries   | DiskErrs       |
| EntryName\$   | DiskCapacity   |
| EntryDir      | DiskUsed       |
| EntryBit\$    | DiskFree       |
| EntrySize     | DiskBlocks     |
| EntryDate     |                |

#### DIRECTORY EXAMPLE

### 1.435 bum\_chdir

Command: CHDIR

Syntax: CHDIR "Path:" -or- IF CHDIR("Path:") Then...

This command will change the current working directory for ALL disk-related commands. Used as a function, a value of TRUE will be returned if the directory change was successful, or FALSE if it was unsuccessful.

### 1.436 bum\_pathlock

Function: PATHLOCK

Syntax: Lock.l=PATHLOCK

This function will return the BCPL pointer to the lock of the current directory. You should NEVER "Unlock\_" this lock, but it is useful to use command "NameFromLock\_" with it to determine the full pathname of the current directory, for example. (NOTE: NameFromLock\_ requires 2.0 and above!)

### 1.437 bum\_copyfile

Command: COPYFILE

Syntax: COPYFILE "First","SECOND" -or- IF COPYFILE("FIRST","SECOND") Then...

This command will copy files, much like the CLI command "Copy." In the function form, it will return TRUE for success, and FALSE for failure. Note that the speed at which it copies can be increased by increasing the "CopyBuffer," which defaults to 8192 bytes. (See below)

### 1.438 bum\_setcopybuffer

Statement: SetCopyBuffer

---

Syntax: SetCopyBuffer BUFFERSIZE

This statement is used to set the size of the COPYFILE command's memory buffer. The default size is 8192 bytes, but this can be adjusted from 256 bytes to nearly all your free memory. A larger buffer will normally increase the speed at which the COPYFILE command operates, but only up to the size of the largest file you're copying. For example, if the largest file you need to copy is 25000 bytes, then it will be useless to set the COPYBUFFER above 25000.

### 1.439 bum\_namefile

Command: NAMEFILE

---

Syntax: NAMEFILE "Oldname", "Newname" -or-  
IF NAMEFILE("Oldname", "Newname") Then...

This command returns FALSE for failure, TRUE for success:  
The file "oldname" is renamed to "newname," if possible, and may be moved to other directories within the same volume. It is not yet possible to use NAMEFILE to move a file from one volume to another, however.

### 1.440 bum\_makedir

Command: MAKEDIR

---

Syntax: NAMEFILE "Path:Dir" -or- If NAMEFILE("Path:Dir") Then...

This command will attempt to create a new directory with the given pathname. It is only possible to create one level at a time, however. For example, MAKEDIR will fail if you attempt to MAKEDIR "RAM:New/Data" if the directory "RAM:New" does not yet exist. Used as a function, MAKEDIR returns TRUE for success, and FALSE for failure.

### 1.441 bum\_moreentries

Command: MOREENTRIES

---

Syntax: MOREENTRIES -or- If MOREENTRIES Then...

This command will read the next entry in the current directory for inspection with other "ENTRY" commands. Used within a loop, it is easy to read an entire directory with these commands, similar to the "DIR" or "LIST" commands of AmigaDOS. (See below. An example follows)

---

### 1.442 bum\_entryname\$

Function: ENTRYNAME\$

---

Syntax: n\$=ENTRYNAME\$

This function returns the name of the current directory entry. If used before the first "MOREENTRIES" command, it will return the name of the current directory. (Just the current directory's name, not the full path name)

### 1.443 bum\_entrydir

Function: ENTRYDIR

---

Syntax: If ENTRYDIR Then...

This function returns TRUE if the current entry is a sub-directory, or FALSE if it is a file.

### 1.444 bum\_entrybit\$

Function: ENTRYBIT\$

---

Syntax: n\$=ENTRYBIT\$

This function returns a string containing the protection-bits status of the current file or directory. An example may be "----RWED" the same format as given by the AmigaDOS "LIST" command. Possible bit settings are HSARWED: H=HIDDEN, S=SCRIPT, A=ARCHIVED, R=READABLE, W=WRITEABLE, E=EXECUTEABLE, D=DELETEABLE. Any bits that are not set will have the "-" character in their place.

### 1.445 bum\_entrysize

Function: ENTRYSIZE

---

Syntax: n.l=ENTRYSIZE

This function returns the size in bytes of the current directory entry. Note that sub-directories return a size of zero whether they are empty or not.

### 1.446 bum\_entrydate

Function: ENTRYDATE

---

Syntax: d\$=DATE\$(ENTRYDATE)

This function returns the date the current entry was last modified, in the same format as SYSTEMDATE uses. (The number of days since 1/1/1978) Thus, you may use the DATE\$ and DATEFORMAT commands to translate it into a string with a more human-readable string.

## 1.447 bum\_entryhour

Function: ENTRYHOUR, ENTRYMINS, ENTRYSECS

---

Syntax: h=ENTRYHOUR;m=ENTRYMINS;s=ENTRYSECS

ENTRYHOUR:

This function is related to ENTRYDATE, above, but returns the hour of the day (0-23) at which the entry was last modified.

ENTRYMINS:

Returns the minute (0-59) of the time at which the entry was modified.

ENTRYSECS:

Returns the second (0-59) of the time at which the entry was modified.

## 1.448 bum\_entrycomment\$

Function: ENTRYCOMMENT\$

---

Syntax: c\$=ENTRYCOMMENT\$

This function will return the string containing the filenote for the current directory entry, or "" if there is none.

## 1.449 bum\_elmoredosexample

```
*****
* DIRECTORY EXAMPLE *
*****
```

This example will list the entries in RAM: in a format very similar to the AmigaDOS "LIST" command. Note that you need to "ChDir" to a directory in order to read it from the first entry again.

```
ChDir "RAM:"
```

```
While MoreEntries
  Print LSet$(EntryName$,30)
```

---

```
If EntryDIR then Print "Dir   " Else Print LSet$(Str$(EntrySize),6)
Print EntryBits$," ",Date$(EntryDate)," "
Print EntryHour,":",Right$("0"+Str$(EntryMins),2),": "
NPrint Right$("0"+Str$(EntrySecs),2)
Wend
MouseWait
```

### 1.450 bum\_analyzedisk

Command: ANALYZEDISK

---

Syntax: ANALYZEDISK "DRIVE:" -or- If ANALYZEDISK "DRIVE:" Then...

This command returns FALSE if the specified device or pathname was not valid. If successful, details about the specified drive can be read with the following "DISK" functions. The values for these functions will not change until ANALYZEDISK is executed again, either on the same drive or another one.

Note: If given a full pathname, such as "DF0:System/Utilities" this command will still know enough to analyze the disk "DF0:"

### 1.451 bum\_diskunit

Function: DISKUNIT

---

Syntax: n=DISKUNIT

This function will return the unit number of the most recently analyzed disk. DF0: for example, would return zero, while DF1: would return 1.

### 1.452 bum\_diskerrs

Function: DISKERRS

---

Syntax: n=DISKERRS

This function will return the number of soft errors DOS knows about on the last analyzed disk. This should normally be zero.

### 1.453 bum\_diskcapacity

Function: DISKCAPACITY

---

Syntax: n=DISKCAPACITY

This function returns the capacity in bytes of the last analyzed drive. For example, a fastfilesystem-formatted disk's max capacity is 837K, so DISKCAPACITY would return 857904, which divided by 1024 is 837.

---

## 1.454 bum\_diskused

Function: DISKUSED

---

Syntax: n=DISKUSED

This function returns the number of bytes actually in-use on the last analyzed drive.

## 1.455 bum\_diskfree

Function: DISKFREE

---

Syntax: n=DISKFREE

The opposite of DISKUSED, DISKFREE returns the number of bytes free on the disk. This function would be very useful, for example, in a program that needed to save information to disk. You would be able to first determine if the specified SAVE disk had sufficient space.

## 1.456 bum\_diskblocks

Function: DISKBLOCKS

---

Syntax: n=DISKBLOCKS

This function returns the number of bytes each block on a disk uses, making it possible to convert the byte-values of the above functions to number of blocks.

## 1.457 bum7main

BUM7 MAIN DOC

Updates and Fixes to Blitz2 v1.9

NEW COMMANDS

NEW LIBRARY'S INCLUDED

Stability

---

Several improvements have been made to the stability of Blitz2 programs. First up all string commands have been fixed to both work properly with the null-termination system introduced in v.18 (our apologies here) and error checking has been added. No longer will system crashes be caused with illegal size parameters in mid\$() etc.

---



Also, the ASMEND command has been added. Using assembler in statements and functions use to require the use of UNLK A4 and RTS. This system did not work properly when runtime errors were enabled. A fullproof method is now available, simply use the ASMEND command in place of any RTS commands. Blitz2 will look after the unlinking of A4, allow for runtime errors and then do an RTS. Finally my darts demo runs with runtime errors enabels (yipeeeee!).

And finally, runtime error checking has been added for square bracket arrays. Yup, out of range checking has been incorporated for those of us whose first guess at why our programs were crashing was to go through and check such usage manually. This with the new string checking and the sexy new debugger should return a few people to using Blitz2's runtime debugging features. Thanks to all those and their abuse for helping us get these problems resolved.

### Debugging

---

The debugger is now a separate program that is launched by Blitz2 when a program is run (runtime errors enabled of course).

The gadgets in the window allow the programmer access to the standard debugging features. CtrlAltC can still be used to halt programs, especially those using Slices and Displays in Blitz mode.

By increasing the size of the window the program listing can be viewed.

A PANIC! button has also been introduced once a program is launched from the editor. Yup, programs are now launched not run so those into weird system crashes may be able to return to Ted leaving their programs disabled in memory. A REBOOT button may have been more useful...

The source code for the default debugger is included in the acidlibsrc directory of the libsdev archive. It is extremely well documented by Mark so those wanting to extend the functionality of the system are most welcome. Serial port support for using a remote terminal would be very nice.

### Interupts and BlitzKeys

---

BlitzKeys, BlitzKeys, BlitzKeys. A common profanity used by those of us use to keyboard lock ups in keyboard based Blitz games (especially SkidMarks). Well no more!

Blitz now leaves Amiga interupts enabled in Blitz mode. This means that not only is the system keyboard interupt still running (thank the lord) but any SetInts initiated in Amiga mode will continue.

Other advantages are that Blitz mode is now more acceptable to the CD32 environment and RawStatus can be used in Amiga mode for keyboard games not wanting to run in Windows (yuck).

Blitzkeys On now does a bit of a "BlitzkeysInput" for one character inputs only, any other inputs use the previously defined Input channel.

Blitzkeys Off no longer exists. BlitzRepeat has gone (no repeating keys).

---

## Serial Stuff

---

Peter Tavinor has upgraded the Serial Library. ReadSerial now return a word (read unsigned byte) so chr\$(255) is acceptable. WriteSerialString includes flags for DoIO and True String (not null terminated). ReadSerial has a new flag "WaitForChar"

## GadTools

---

The GTPalette has had several default tags removed as they crashed under 2.0 (yeh, great, just what tags are suppose to avoid). AttachGTList had a minor problem in some situations (now fixed).

Another bug that has been found in GadTools under 2.0 is that GTLists actually allocate gadget id's for internal use. Besides being completely unethcal (and fixed in 3.0) it means that programmers should use id values of greater than 50 to avoid this system bug. Adding GTLists last in your list should also work although their id's should be more than the number of lines of text they should display (no I am not going to explain further).

## ScreensLib

---

The Screen command now rounds the width up to the nearest multiple of 16 rather than causing the error "Screen Width Must be a multiple of 16". Common sense I think.

## ValLib

---

Val() now accepts hex and binary strings (preceeded by "\$" and "%" of course.) Because Val() returns a float it should not be used to evaluate 32 bit integers (longs).

## Display Library

---

A quick version of the InitCopList command has been included which calculates the number of colours, sprites and size depending on just the type parameter.

As promised the Display library now sports new commands for palette effects and so forth. There are two varieties of copper based commands, the first allows the user to insert a new palette or copperstring at a certain line of the display, the other allows control of each and every line of the display.

For line based effects a negative value should be used in combination with the numcustoms parameter of the InitCopList command. Color splits, bitmap scrolling, scan doubling/trebling/quadrupling and custom copper strings can now be acheived on a line by line basis.

## Palette Library.

---

A number of commands have been added to the Palette library for use mainly with the display library. Fades and Colour cycling can now be performed on palette objects themselves (rather than on screens and slices) and hence can be used in conjunction with the DisplayPalette command.

---

Banks and Decoding.

---

Decode commands have been added to allow programmers to both include shapes, sounds, palettes, music and ILBM's (IFF bitmaps) in their programs or from preloaded files (mainly using the LoadBank command or unpacking type commands).

To include such files in the program the incbin command is used. Typically a list of included files will be situated at the bottom of the listing (with an End statement just above to be safe). Each IncBin will be preceded by a label and the ?label syntax would be used to pass the location of each included file to the appropriate Decode command at the top of the program.

Those unhappy with the slow but memory unhungry LoadBitMap command can take advantage of the fast but memory hungry method of loading iff/ilbm files with the code listed in the DecodeILBM command description.

Argslib fixes

---

This library processes arguments passed to it. A few fixes have mainly been made over the old one.

- 1) Quoted arguments count as one argument. EG "One arg" will give your program both words as one argument, not 2.
- 2) Multiple workbench arguments are allowed now.

If you are to use workbench arg handling, you MUST have WBSTARTUP at the top of your program!!

## 1.458 bum7\_newlibs

Here are all the new library's included with BUM7:

|                    |                 |
|--------------------|-----------------|
| AaronsIconLib      | RCommoditiesLib |
| ElmoreLibs         | REncryptLib     |
| ElmoreIncLib       | RIFxLib         |
| FuzziesReqLib      | RIGfxLib        |
| NeilsCIATrackerLib | RIPackLib       |
| NeilsProgressLib   | RIReqLib        |
| NeilsReqToolsLib   | RIToolTypesLib  |
| RIAmosFuncLib      | RITrackDiskLib  |
| RIAnimLib          | RIZoneJoyLib    |
| RIAppLib/WBlib     | RomulusLibs     |

## 1.459 romulusmain

---

Look for these commands in: CRUNCHLIB  
PRINTERLIB  
REQUESTERLIB  
LOCALE LIB  
CONSOLE LIB

## 1.460 riencrypt

Library Name: riencryptlib #55  
Authors : ReflectiveImages, 17 Mayles Road, Southsea, Portsmouth,  
Hampshire, UK PO4 8NP  
OverView : Another Reflective Images Library, good for war games?

Authors Docs:

RIEncryptLibrary

Date sent: 26-AUG-1994

---

You can have this little library if you like. Sorry there are no full docs in the archive - the lib was done in a hurry for someone. It performs Enigma compression and is very cute ;-). The archive contains the source code for the library. I'm sure it wouldn't take you a second to have a look at it ;-).

Commands in the library:

Encrypt memadr,len[,wheel1,wheel2,wheel3]

This will encrypt a block of memory starting at the address and running through to addresslength-1. The optional wheel parameters allow you to specify the start positions of the three wheels. If you leave these out then the wheels' start positions will be randomised.

GetWheel n

This will tell you the position that wheel n stopped at after encrypting a file. n can range from 1 to 3 - YOU MUST REMEMBER THESE POSITIONS IF YOU WANT TO DECRYPT THE FILE (at the moment at least).

Decrypt memadr,len,wheel1,wheel2,wheel3

Same Encrypt except that it does the opposite and the wheel positions ARE NOT OPTIONAL. The positions should be the ones you wrote down after encrypting the file. I may, in future, change it so that you can also specify the start wheel positions instead of the end ones (shouldn't be tooooo hard ;-)).

Oh well, have a look and tell us what you think.....

---

## 1.461 reqtoolsmain

Library: neilsreqtoolslib #54

Author: Neil O'Rourke, 6 Victoria St, TAMWORTH, NSW 2340, AUSTRALIA

Overview: Access to the ReqTools library.

|                         |                            |
|-------------------------|----------------------------|
| RTEZRequest             | RTEZGetString              |
| RTEZFlagsRequest        | RTLockWindow               |
| RTEZFontRequest         | RTUnlockWindow             |
| RTEZScreenModeRequest   | RTVersion                  |
| RTEZPaletteRequest      | RTRevision                 |
| RTEZLoadFile            | IsReqtoolsActive           |
| RTEZSaveFile            | RTASyncRequest             |
| RTEZPathRequest         | RTCheckASyncRequest        |
| RTEZMultiLoadFile       | RTEndASyncRequest          |
| RTEZRNextPathEntry      | RTASyncPaletteRequest      |
| RTEZSetDefaultDirectory | RTCheckASyncPaletteRequest |
| RTEZSetPattern          | RTEndASyncPaletteRequest   |
| RTEZFreePattern         | RTRequest                  |
| RTEZGetLong             | RTFileRequest              |
| RTEZGetLongRange        |                            |

Author's Documentation  
ReqToolslib V1.70b

Neil O'Rourke

\*\* BETA FOUR \*\*

This is an implementation of Nico Franco's ReqTools library.

There are two different implementations of each function, a simple one (denoted by EZ (pronounced E-Zee) in the command name), and a complex one. The simple implementation has bog standard requesters that the programmer has little (if any) control over. The purpose of these is to get your programs working fast (or it could be that you don't need all the fancy options that are available), with a minimum of setup for the requesters. That isn't to say the requesters aren't powerful; on the contrary, ReqTools requesters leave ASL requesters in the dust when it comes down to sheer power.

The more complex implementation requires you to build a TagList and supply it to the requester. This shouldn't really be needed, as all the EZ requesters have a resonable set of defaults and options to avoid this.

All the ReqTools requesters attach themselves to the window that DOS errors are. To do this, simply make your window the current window with Use Window WindowNum, then CatchDosErrs. By default, the requesters will go to the Workbench.

### Compatibility

~~~~~

All ReqTools requesters, with the exception of the ScreenMode request, are

compatible with KickStart 1.3.

DO NOT CALL RTEZSCREENMODEREQUEST IF YOU ARE RUNNING 1.3!! THIS IS YOUR RESPONSIBILITY!

#### Future Directions

~~~~~

The recent releases of ReqTools have included a preferences program to control the behaviour of requesters. This does not sit well with the pre-programmed options that my interface code uses. It could be that future releases of ReqToolsLib will not set these, but this is early days and only time and user feed-back will indicate the path to go.

## 1.462 progressmain

The doc file was so much damaged that I could not convert it....If somebody has a good file, please send or mail it to me!

## 1.463 nreq1

Function: RTEZRequest

Syntax : result=RTEZRequest(Title\$,BodyText\$,GadgetText\$ [,ReqPosition  
[, DefaultResponse, Flags]])

#### Description:

Opens a simple requester in the center of your screen. You can have multiple gadgets in Gadget\$, separate them by a bar (|).

To have multiple lines in your gadget, separate them by a Chr\$(10).

Title\$ can be whatever you want. If it is left blank, the title of the calling window will be used.

The requester auto-adjusts its size to the length of the body text.

Also, the requester will block any input to the calling window, and if the user selects that window he will see the usual wait pointer.

The requester returns the number of the gadget selected, gadget zero is the extreme right hand gadget (usually Cancel), and numbered from one starting from the left hand side of the requester.

The optional parameter ReqPos allows relative positioning of the requester. You can have the requester open up in the center of the screen (the default position), or the center of the window, or the TopLeft corner of the screen or window. The valid flags are:

|                   |    |                            |
|-------------------|----|----------------------------|
| #REQPOS_POINTER   | =0 | Relative to MousePointer   |
| #REQPOS_CENTERWIN | =1 | Center of window           |
| #REQPOS_CENTERSCR | =2 | Center of screen (default) |

```
#REQPOS_TOPLEFTWIN    =3   TopLeft of the window
#REQPOS_TOPLEFTSCR    =4   TopLeft of the screen (Amiga default)
```

There are two further options:

DefaultResponse allows you to change what gadget is selected when the Return key is hit, and this is by default the left hand gadget (1)

Flags controls a few other items in the requester.

```
#EZREQB_NORETURNKEY  =1   Turns off the return key as positive response
#EZREQB_LAMIGAQUAL   =2   Keyboard shortcuts are limited to LA-V and LA-B
#EZREQB_CENTERTEXT   =4   Centers the text in the requester.
```

You can make keyboard shortcuts for the gadgets by placing an underscore character '\_' before the character you wish to have as the shortcut, for example your "Ok" gadget could be defined as "\_Ok", and Right Amiga-O would then satisfy the requester.

## 1.464 nreq2

Function: RTEZFlagsRequest

---

```
Syntax   : result=RTEZFlagsRequest (Title$,BodyText$,GadgetText$,
                                     IDCMPFlags[,ReqPos])
```

Description:

This requester is similar to the standard RTEZRequest, but it can also be satisfied by an IDCMP flag (eg DiskInserted). Either the gadget number or the IDCMP flag will be returned in result.

This requester also supports no gadgets, by supplying "" as the Gadget Text\$. Since the window is locked, the user cannot proceed until the request is satisfied. Use this at your own peril! This requester can force the user to take an action he may not want to, if you don't supply any gadgets. Think, have second thoughts, and then think some more. With enough thought, you *will* come to the conclusion that the user needs at least one gadget.

The ReqPosition flag is also available for this requester, as is the keyboard shortcuts.

## 1.465 nreq3

Function: RTEZFontRequest

---

```
Syntax   : *MyFont.TextAttr=RTEZFontRequest (Title$)
```

Description:

Brings up the Font requester, and returns a pointer to a TextAttr structure.

---

The Font requester has had a total rewrite for the V1.7 release of ReqToolsLib. Using it is just the same, but it now returns a saner structure.

The structure is defined:

```
NewType.TA
  Name.s
  YSize.w
  Style.b
  Flags.b
End Newtype
```

## 1.466 nreq4

Function: RTEZScreenModeRequest

Syntax : \*MyScreenMode =RTEZScreenModeRequest (Title\$ [,DisplayFlags])

Description:

Returns a pointer to the following structure:

```
NEWTYPe.MyScreenMode
  DisplayID.l
  DisplayWidth.w
  DisplayHeight.w
  DisplayDepth.w
  OverscanType.w
  AutoScroll.l
End NEWTYPE
```

The DisplayFlags field allows you to have control over what options you offer the user. By default, the requester has a resonable set of options, but you may wish to add too (or subtract from) these.

Allowable flags are:

```
#SCREQF_OVERSCANGAD - Add an overscan cycle gadget to the requester.
  After the requester returns you may read the
  overscan type in '\OverscanType' If this is 0 no
  overscan is selected
  (Regular Size), if non-zero it holds one of the
  OSCAN_... values defined in the include file
  'intuition /screens.[h|i]'.
#SCREQF_AUTOSCROLLGAD- Add an autoscroll checkbox gadget to the requester.
  After the requester returns read '\AutoScroll' to
  see if the user prefers autoscroll to be on or off.
#SCREQF_SIZEGADS - Add width and height gadgets to the requester. If
  you do not add these gadgets the width and height
  returned will be the default width and height for
  the selected overscan type.
#SCREQF_DEPTHGAD - Add a depth slider gadget to the requester. If you
  do not add a depth gadget, the depth returned will
  be the maximum depth this mode can be opened in.
#SCREQF_NONSTDMODES - Include all modes. Unless this flag is set
  RTEZScreenModeRequest() will exclude nonstandard
```



modes. Nonstandard modes are presently HAM and EHB (ExtraHalfBrite). So unless you are picking a mode to do some rendering in leave this flag unset. Without this flag set the mode returned will be a normal bitplaned mode.

#SCREQF\_GUIMODES - Set this flag if you are getting a screen mode to open a user interface screen in. The modes shown will be standard modes with a high enough resolution (minumum 640 pixels). If this flag is set the SCREQF\_NONSTDMODES flag is ignored.

Do not attempt to call this requester under WB1.3.

## 1.467 nreq5

Function: RTEZPaletteRequest

Syntax : SelectedColour.w=RTEZPaletteRequest(Title\$,FirstColour)

Description:

Brings up the Palette requester. Returns the last colour the user selected, or -1 if the user hit cancel. If the user changed the colours, they are reflected in the viewport that the window is attached to.

## 1.468 nreq6

Function: RTEZLoadFile

Syntax : name\$=RTEZLoadFile(Title\$,FileName\$)

Description:

This brings up the standard file requester. The directories are buffered, so it doesn't have to reload the directory each time it is called. Note that FileName\$ must be at least 108 characters long (use the MaxLen function of this).

Note that by default, pattern matching is not enabled. If you want to match a particular pattern, use the RTEZSetPattern command described below.

Also, the file name isn't copied to FileName\$. You can have a default file name by writing to FileName\$, but this will be cleared after the call finishes. This is also true of the SaveFile requester.

## 1.469 nreq7

Function: RTEZSaveFile

Syntax : name\$=RTEZSaveFile(Title\$,FileName\$)

Description:

A separate requester, the SaveFile requester is different from the LoadFile requester in a number of ways. First, it has a separate buffer from the LoadFile requester. Second, the OK text is changed to Save. Third, the user cannot double-click a file to select it, to prevent accidental deletions. Finally, if the user types in a non-existent directory, he will be asked if he would like that directory created.

FileName\$ must be at least 108 bytes long as well.

Note that by default, pattern matching is not enabled. If you want to match a particular pattern, use the RTEZSetPattern command described below.

### 1.470 nreq8

Function: RTEZPathRequest

Syntax : name\$=RTEZPathRequest(Title\$)

Description:

Prompts the user to select a path. This is also a separate requester to the LoadFile and SaveFile requesters, and maintains its own directory list.

### 1.471 nreq9

Function: RTEZMultiLoadFile

Syntax : ret.l=RTEZMultiLoadFile(Title\$)

Description:

Allows the user to select multiple files for loading (this makes no sense for saving). ret is either True for a list having been selected, or False if the user cancelled.

If you call RTEZMultiLoadFile, any previous FileList that was loaded is deleted, even if the user cancels the requester.

### 1.472 nreq10

Function: RTNextPathEntry

Syntax : name\$=RTNextPathEntry

Description:

This function returns the next file from a RTEZMultiLoadFile call, or a null string if there is no entry, so you can safely loop about until an empty string is returned.

### 1.473 nreq11

Statement: RTEZSetDefaultDirectory

---

Syntax : RTEZSetDefaultDirectory Requester#,Directory\$

Description:

This can be used to set a default directory for the user. Directory\$ is the default path, and Requester# is one of the following:

- 0 - EZLoadFile
- 1 - EZSaveFile
- 2 - EZPathRequest
- 3 - EZMultiLoadFile

### 1.474 nreq12

Statement: RTEZSetPattern

---

Syntax : RTEZSetPattern Requester#,Pattern\$

Description:

Enables and sets the pattern matching in LoadFile and SaveFile requesters. Valid requesters are:

- 0 - EZLoadFile
- 1 - EZSaveFile
- 3 - EZMultiLoadFile

### 1.475 nreq13

Statement: RTEZFreePattern

---

Syntax : RTEZFreePattern Requester#

Description:

Turns off pattern matching in the requester. Valid requester numbers are:

- 0 - EZLoadFile
- 1 - EZSaveFile
- 3 - EZMultiLoadFile

### 1.476 nreq14

Function: RTEZGetLong

---

Syntax : result.l=RTEZGetLong(Title\$,BodyText\$ [,DefaultValue])

Description:

This prompts the user for a number. BodyText\$ can be formatted with chr\$(10) if needed. DefaultValue can be supplied to suggest a value to the user.

---

## 1.477 nreq15

Function: RTEZGetLongRange

---

Syntax : result.l=RTEZGetLongRange(Title\$,BodyText\$,Min.l,Max.l  
[,DefaultValue])

Description:

Like RTEZGetLong, but this imposes an inclusive minimum and maximum on the number entered. Again, DefaultValue can be used to suggest a value to the user.

## 1.478 nreq16

Function: RTEZGetString

---

Syntax : returned\$=RTEZGetString(Title\$,BodyText\$,MaxChars  
[,DefaultString])

Description:

Prompts the user to enter a string (which can be up to MaxChars in length). As usual, you can format the BodyText\$ with chr\$(10) and supply a default string. If you do supply one, then make sure that the length of the string is less than MaxChars, otherwise you could corrupt innocent memory.

## 1.479 nreq17

Function: RTLockWindow

---

Syntax : WinLock=RTLockWindow(Window#)

Description:

This locks the numbered window, blocks all input to that window except depth arranging (and the Zip gadget, under 2.0), and put up the standard wait pointer. If you have some utility to make the hands spin or something like that, then that happens as well. WinLock must be saved!

## 1.480 nreq18

Statement: RTUnlockWindow

---

Syntax : RTUnlockWindow Window#,WinLock

Description:

Unlocks the window that you locked with RTLockWindow.

---

## 1.481 nreq19

Functions: RTVersion and RTRevision

---

Syntax : ver=RTVersion and ver=RTRevision

Description:

Both these functions return the version number and revision number of the ReqTools library that this code interfaces to.

Of no real use at the moment, but future developments in ReqTools may require a minimum library version to work. ReqToolsLib will always open whatever ReqTools are available.

## 1.482 nreq20

Function: IsReqToolsActive

---

Syntax : result=IsReqToolsActive

Description:

Returns True if ReqTools was able to initialise, and False if it wasn't (eg not available).

## 1.483 nreq21

Function: RTASyncRequest

---

Syntax : ret.l=RTASyncRequest(Title\$,BodyText\$,GadgetText\$)

Description:

This function puts up a request, locks the window and returns immediately. If the requester couldn't be put up, ret is False. The program is now free to continue, but the user can have the option of aborting a lengthy operation if required.

Important Note: Do not attempt to have two asynchronous requesters up.

Note: As of V1.41b, RTASyncRequest uses the current window for the requester.

## 1.484 nreq22

Function: RTCheckASyncRequest

---

Syntax : ret.l=RTCheckASyncRequest

Description:

Checks the status of the asynchronous requester, and returns True if it is still up.

---

## 1.485 nreq23

Statement: RTEndASyncRequest

Syntax : RTEndASyncRequest

Description:

Ends the asynchronous request, under program control, and unlocks the calling window.

NOTE: Do not call this function if the user has hit the gadget in the request! The requester automatically frees its self.

These three commands require a demonstration to illustrate:

```

NoCli:WBStartup
WbToScreen 0
Window 0,10,10,100,100,$8|$1000|2|4,"RTTest window",2,1
CatchDosErrs
ret.l=RTASyncRequest("Hi There!","Please Wait...","Cancel")

If ret ;The requester opened OK
  For x.w=10 To 1 Step -1
    WLocate 0,10
    NPrint "Seconds:",x
    VWait(50)
    ret1.l=RTCheckASyncRequest ;Is the requester still up?
    If NOT ret1 ;No, so end this processing
      Pop If:Pop For:Pop If
      Goto cancelled
    EndIf
  Next x
  RTEndASyncRequest ;Normal finish
EndIf
End

cancelled:
a.l=RTEZRequest("Oi!","You cancelled!?!","Sure Did")
End

```

## 1.486 nreq24

Function: RTASyncPaletteRequest

Syntax : ret.l=RTASyncPaletteRequest(Title\$,FirstColour)

Description:

Similar to RTEZPaletteRequest, this command puts up a palette requester and returns immediatly. Note, however, that the calling window is NOT locked, unlike all other ReqTools requesters. This allows you to launch a seperate palette requester and continue processing.

## 1.487 nreq25

Function: RTCheckASyncPaletteRequest

---

Syntax : ret.l=RTCheckASyncPaletteRequest

Description:

Returns True if the requester is still up, False if the user hit Ok or Cancel. NOTE: There is no way to detect exactly how the user exited the command.

## 1.488 nreq26

Statement: RTEndASyncPaletteRequest

---

Syntax : RTEndASyncPaletteRequest

Description:

Closes the requester.

A short demonstration program to illustrate:

```
WbToScreen 0
Window 0,0,0,200,100,$40,"Hi there",2,1
CatchDosErrs

ret.l=RTASyncPaletteRequest("Play with these",1)

count.l=0
If ret
    While count<100
        count+1
        WLocate 0,0
        NPrint "Seconds:",count
        If NOT RTCheckASyncPaletteRequest Then Goto quit
        Delay_ 60
    Wend
    RTEndASyncPaletteRequest
EndIf

quit:
Free Window 0
```

## 1.489 nreq27

Function: RTRequest

---

Syntax : ret=RTRequest (BodyText\$,GadgetText\$,TagList)

Description:

This is the standard form of the ReqTools Requester. You must supply the tag list to control the requester. The requester title, if not specified

---

in the tag list, will be "Information" if you have only one response gadget, or "Request" if you have two or more responses.

If you don't supply a tag list, ReqTools will use its own defaults.

It is *\*your\** responsibility to ensure the TagList is correctly set up.

Most of the tags of interest are included in RTEZRequest and RTEZFlagsRequest as standard.

Acceptable tags are:

- #RT\_Window - \*name.Window  
Window that will be used to find the screen to put the requester on.  
You *\*MUST\** supply this if you are a task calling this function and not a process! This is because tasks don't have a pr\_WindowPtr.
- #RT\_IDCMPFlags - (LONG)  
Extra idcmp flags to return on. If one these IDCMP flags causes the requester to abort the return code will equal the flag in question.
- #RT\_ReqPos - (LONG)  
One of the following:
  - #REQPOS\_POINTER - requester appears where the mouse pointer is (default).
  - #REQPOS\_CENTERSCR - requester is centered on the screen.
  - #REQPOS\_CENTERWIN - requester is centered in the window (only works if the pr\_WindowPtr of your process is valid or if you use RT\_Window). If RT\_Window is NULL the requester will be centered on the screen.
  - #REQPOS\_TOPLEFTSCR - requester appears at the top left of the screen.
  - #REQPOS\_TOPLEFTWIN - requester appears at the top left of the window (only works if the pr\_WindowPtr of your process is valid or if you use RT\_Window).

The requester will always remain in the visible part of the screen, so if you use the Workbench 2.0 ScreenMode preferences editor to enlarge your Workbench screen and you scroll around, the requester will always appear in the part you can see. REQPOS\_CENTERSCR and REQPOS\_TOPLEFTSCR also apply to the visible part of the screen. So if you use one of these the requester will be appear in the center or the top left off what you can see of the screen as opposed to the entire screen.  
REQPOS\_CENTERWIN and REQPOS\_TOPLEFTWIN fall back to REQPOS\_CENTERSCR or REQPOS\_TOPLEFTSCR respectively when there is no parent window. So you can safely use these without worrying about the existence of a window.
- #RT\_LeftOffset - (LONG)



- Offset of left edge of requester relative to position specified with RT\_ReqPos (does not offset the requester when RT\_ReqPos is REQPOS\_POINTER).
- #RT\_TopOffset - (LONG)
- Offset of top edge of requester relative to position specified with RT\_ReqPos (does not offset the requester when RT\_ReqPos is REQPOS\_POINTER).
- #RT\_PubScrName - (\*string)
- Name of public screen requester should appear on. When this tag is used the RT\_Window tag will be ignored.
- If the public screen is not found the requester will open on the default public screen.
- Only works on Kickstart 2.0! reqtools.library does not check this, it is up to you \*NOT\* to use this tag on Kickstart 1.3 or below!
- Note that the 1.3 version of reqtools.library also understands and supports this tag (on 2.0).
- #RT\_Screen - (\*name.Screen)
- Address of screen to put requester on. You should never use this, use RT\_Window or RT\_PubScrName.
- #RT\_ReqHandler - (struct rtHandlerInfo \*\*)
- Using this tag you can start an "asynchronous" requester. ti\_TagData of the tag must hold the address of a pointer variable to a rtHandlerInfo structure.
- The requester will initialize this pointer and will return immediately after its normal initialization. The return code will not be what you would normally expect. If the return code is \_not\_ equal to CALL\_HANDLER an error occurred and you should take appropriate steps. If the return code was CALL\_HANDLER everything went ok and the requester will still be up!
- See the explanation for rtReqHandlerA() below for the following steps you have to take.
- #RT\_WaitPointer - (BOOL)
- If this is TRUE the window calling the requester will get a standard wait pointer set while the requester is up. This will happen if you used the RT\_Window tag or if your process's pr\_WindowPtr is valid. Note that after the requester has finished your window will be ClearPointer()-ed. If you used a custom pointer in your window you will have to re-set it, or not use the RT\_WaitPointer tag and put up a wait pointer yourself.
- If your program requires ReqTools V38 it is advised you use RT\_LockWindow instead. Defaults to FALSE.
- #RT\_LockWindow - (BOOL) [V38]
- If this is TRUE the window calling the requester will get locked. It will no longer accept any user input and it will get standard wait pointer set. This will happen only if you used the RT\_Window tag or if your process's pr\_WindowPtr is valid.
- RT\_LockWindow will restore a custom pointer if you have used one (unlike RT\_WaitPointer). So you do not have to worry about having to restore it

yourself. It is advised you use this tag as much as possible. Defaults to FALSE.

#RT\_ScreenToFront - (BOOL) [V38]  
 Boolean indicating whether to pop the screen the requester will appear on to the front. Default is TRUE.

#RT\_ShareIDCMP - (BOOL) [V38]  
 Boolean indicating whether to share the IDCMP port of the parent window. Use this tag together with the RT\_Window tag to indicate the window to share IDCMP with. Sharing the IDCMP port produces less overhead, so it is advised you use this tag. Defaults to FALSE.

#RT\_Locale - (struct Locale \*) [V38]  
 Locale to determine what language to use for the requester text. If this tag is not used or its data is NULL, the system's current default locale will be used. Default NULL.

#RT\_IntuiMsgFunc - (struct Hook \*) [V38]  
 The requester will call this hook for each IDCMP message it gets that doesn't belong to its window. Only applies if you used the RT\_ShareIDCMP tag to share the IDCMP port with the parent window. Parameters are as follows:  
   A0 - (struct Hook \*) your hook  
   A2 - (struct rtReqInfo \*) your requester info  
   A1 - (struct IntuiMessage \*) the message  
 After you have finished examining the message and your hook returns, ReqTools will reply the message. So do not reply the message yourself!

#RT\_Underscore - (char) [V38]  
 Indicates the symbol that precedes the character in the gadget label to be underscored. This is to define a keyboard shortcut for this gadget. Example: to define the key 'Q' as a keyboard shortcut for "Quit" and 'N' for "Oh, No!" you would use the tag RT\_Underscore, '\_' and pass as gadfmt "\_Quit|Oh, \_No!". Do not use the symbol '%' as it is used for string formatting. The usual character to use is '\_' like in the example. IMPORTANT: the shortcuts defined using RT\_Underscore take precedence of the default shortcuts! It is for example not wise to use a 'N' for a positive response! Pick your shortcuts carefully!

#RT\_TextAttr - (struct TextAttr \*) [V38]  
 Use this font for the requester. Default is to use the screen font. Note that the font must already be opened by you. ReqTools will call OpenFont() on this TextAttr, \_not\_ OpenDiskFont()! If the font cannot be opened using OpenFont() the default screen font will be used.

#RTEZ\_ReqTitle - (char \*)  
 Title of requester window, default is "Request" unless the requester has less than 2 responses, then the default title is "Information".

#RTEZ\_Flags - (ULONG)  
 Flags for rteZRequestA():

---

```

#EZREQF_NORETURNKEY - turn off the RETURN key as
                      shortcut for positive response.
#EZREQF_LAMIGAQUAL  - keyboard shortcuts are limited
                      to Left Amiga 'V' and 'B', ESC
                      and RETURN.
#EZREQF_CENTERTEXT  - centers each line of body text
                      in the requester window. Useful
                      for about requesters.

#RTEZ_DefaultResponse - (ULONG)
                      Response value that will be returned when the user
                      presses the return key. Will be ignored if the
                      EZREQF_NORETURNKEY flag is set. The text for this
                      response will be printed in bold. Default is 1.

```

## 1.490 nreq28

Function: RTFileRequest

Syntax : name\$=RTFileRequest(Title\$,FileName\$,TagList)

Description:

This is the standard ReqTools requester, and is separate from the LoadFile, SaveFile and PathRequest requesters. No setup is done, but the file name etc is returned as per the above requesters.

Most of the tags that you would set normally are included as standard in the RTREZxFile requesters.

It is *your* responsibility to ensure that the TagList is correctly set up.

Acceptable tags are:

```

#RT_Window          - see rtEZRequestA()
#RT_ReqPos          - see rtEZRequestA()
#RT_LeftOffset      - see rtEZRequestA()
#RT_TopOffset       - see rtEZRequestA()
#RT_PubScrName      - see rtEZRequestA()
#RT_Screen          - see rtEZRequestA()
#RT_ReqHandler      - see rtEZRequestA()
#RT_WaitPointer     - see rtEZRequestA()
#RT_LockWindow      - [V38] see rtEZRequestA()
#RT_ScreenToFront   - [V38] see rtEZRequestA()
#RT_ShareIDCMP      - [V38] see rtEZRequestA()
#RT_Locale          - [V38] see rtEZRequestA()
#RT_IntuiMsgFunc    - (struct Hook *) [V38]
                      The requester will call this hook for each IDCMP
                      message it gets that doesn't belong to its window.
                      Only applies if you used the RT_ShareIDCMP tag to
                      share the IDCMP port with the parent window.
                      Parameters are as follows:
                        A0 - (struct Hook *) your hook
                        A2 - (struct rtFileRequester *) your requester
                        A1 - (struct IntuiMessage *) the message
                      After you have finished examining the message and

```

your hook returns, ReqTools will reply the message. So do not reply the message yourself!

#RT\_Underscore - (char) [V38]  
Indicates the symbol that precedes the character in a gadget's label to be underscored. This will also define the keyboard shortcut for this gadget. Currently only needed for RTFI\_OkText. Usually set to '\_'.  
#RT\_DefaultFont - (struct TextFont \*)  
This tag allows you to specify the font to be used in the requester when the screen font is proportional. Default is GfxBase->DefaultFont.  
#RT\_TextAttr - (struct TextAttr \*) [V38]  
Use this font for the requester. Must be a fixed width font, not a proportional one. Default is to use the screen font or the default font (if the screen font is proportional). Note that the font must already be opened by you. ReqTools will call OpenFont() on this TextAttr, not OpenDiskFont()!  
If the font cannot be opened using OpenFont() or if the font is proportional the default screen font will be used (or the font set with RT\_DefaultFont).  
#RTFI\_Flags - (ULONG)  
Several flags:  
#FREQF\_NOBUFFER - do not use a buffer to remember directory contents for the next time the file requester is used.  
#FREQF\_MULTISELECT - allow multiple files to be selected. rtFileRequest() will return a pointer to an rtFileList structure which will contain all selected files. Use rtFreeFileList() to free the memory used by this file list.  
#FREQF\_SELECTDIRS - set this flag if you wish to enable the selecting of dirs as well as files. You *must* also set FREQF\_MULTISELECT. Directories will be returned together with files in rtFileList, but with StrLen equal to -1. If you need the length of the directory's name use strlen().  
#FREQF\_SAVE - Set this if you are using the requester to save or delete something. Double-clicking will be disabled so it is harder to make a mistake and select the wrong file. If the user enters a non-existent directory in the drawer string

gadget, a requester will appear asking if the directory should be created.

#FREQF\_NOFILES - Set this if you want to use the requester to allow the user to select a directory rather than a file. Ideal for getting a destination dir. May be used with FREQF\_MULTISELECT and FREQF\_SELECTDIRS.

#FREQF\_PATGAD - When this is set a pattern gadget will be added to the requester.

#RTFI\_Height - (ULONG)  
Suggested height of file requester window.

#RTFI\_OkText - (char \*)  
Replacement text for "Ok" gadget, max 6 chars long.

#RTFI\_VolumeRequest - (ULONG) [V38]  
The presence of this tag turns the file requester into a volume/assign disk requester. This requester can be used to get a device name ("DF0:", "DH1:",...) or an assign ("C:", "FONTS:",...) from the user.  
The result of this requester can be found in the filereq->Dir field. The volume can also be changed with rtChangeReqAttrA() and the RTFI\_Dir tag.  
Note:  
that the user may edit the disk/assign names, or enter a new one. Note also that the real device name is returned, not the name of the volume in the device. For example "DH1:", not "Hard1:". The tag data (ULONG) is used to set following flags:

#VREQF\_NOASSIGNS - Do not include the assigns in the list, only the real devices.

#VREQF\_NODISKS - Do not include devices, just show the assigns.

#VREQF\_ALLDISKS - Show all devices. Default behavior is to show only those devices which have valid disks inserted into them. So if you have no disk in drive DF0: it will not show up. Set this flag if you do want these devices included.

NOTE: Do *\*NOT\** use { RTFI\_VolumeRequest, TRUE }!  
You are then setting the VREQF\_NOASSIGNS flag! Use { RTFI\_VolumeRequest, 0 } for a normal volume requester.

NOTE: If you use the RTFI\_FilterFunc described below the third parameter will be a pointer to a rtVolumeEntry structure rather than a pointer to a FileInfoBlock structure!

Tech note: the DOS device list has been unlocked, so it is safe to e.g. Lock() this device and call Info() on this lock.

NOTE: A file requester structure allocated with rtAllocRequest() should not be used for both a file and a volume requester. Allocate two requester structures if you need both a file and a volume requester in your program!

#RTFI\_FilterFunc - (struct Hook \*) [V38]  
 Call this hook for each file in the directory being read (or for each entry in the volume requester).  
 Parameters are as follows:  
 A0 - (struct Hook \*) your hook  
 A2 - (struct rtFileRequester \*) your filereq  
 A1 - (struct FileInfoBlock \*) fib of file OR (struct rtVolumeEntry \*) device or assign in case of a volume requester.  
 If your hook returns TRUE the file will be accepted. If it returns FALSE the file will be skipped and will not appear in the requester.  
 IMPORTANT NOTE: If you change your hook's behavior you MUST purge the requester's buffer (using rtFreeReqBuffer())!  
 IMPORTANT NOTE: When this callback hook is called from a volume requester the pr\_WindowPtr of your process will be set to -1 so \*no\* DOS requesters will appear when an error occurs!

#RTFI\_AllowEmpty - (BOOL) [V38]  
 If RTFI\_AllowEmpty is TRUE an empty file string will also be accepted and returned. Defaults to FALSE, meaning that if the user enters no filename the requester will be canceled. You should use this tag as little as possible!

## 1.491 bum7\_fuzziesreqlib

Library Name: fuzziesreqlib #53

Author: Peter Tavinor, 22 Tuhangi St, Kamo, Whangarei, New Zealand

Commands:

ColourRequest  
 Con\_Base  
 Dos\_Base  
 FileFilter  
 FileReqSize  
 FileStructure  
 GetString\$  
 Gfx\_Base  
 Int\_Base

```

MaxSelect$
NextFile$
ReqColours
ReqFileRequest$
ReqFontSize
Req_Base
Req_Base
TextRequest
TextTimeout

```

#### OverView:

Not only has Peter Tavinor (King Fuzzy) kindly fixed up and added stuff to our own libraries (seriallib especially) he has also sent us this library which is one of three that take advantage of the ReqLibrary.

Fuzzy has also cludged up Ted with hotkeys and stuff, if you want to get hold of this version I suggest writing to him at the above address. Anyway, sorry I couldn't fit more of his stuff in this issue.

#### Authors Docs:

```
Req  Library  Ver 1.1 By King Fuzzy  No. 201
```

```
$VER: Req Library extention Docs version 1.1 by King Fuzzy
```

The following commands are in the Reqlib library and they require the req.library  
To get the Requests on a custom window use CatchDosErrs (see Reference Manual)

## 1.492 bum7\_colourrequest

Function: ColourRequest

Syntax : Colour=ColourRequest (Colour)

#### Description:

This function brings up a handy little palette and allows the user to select a colour using Colour as the default.

#### Example:

```
c=ColourRequest(1)
```

## 1.493 bum7\_conbase

Function: Con\_Base

Syntax : cl.l=Con\_Base

This Returns pointer to Console.device. Used for jsr calls mainly rawkey to cookedkey

### 1.494 bum7\_dosbase

Function: Dos\_Base

---

Syntax : dl.l=Dos\_Base

This Returns pointer to Dos.Library used in jsr calls

### 1.495 bum7\_filefilter

Statement: FileFilter

---

Syntax : FileFilter Show\$,Hide\$

This sets the Hide and Show filters in the req file requester

FileFilter "Req.\*", "\*.Bak"

This will show all files starting with 'Req.' but not ones ending with '.Bak'

### 1.496 bum7\_filereqsize

Statement: FileReqSize

---

Syntax : FileReqSize Lines High,File Length,Device Length

Description:

This sets the size of the Req File Requester. The defaults are 8,16,10

FileReqSize 20,25,12

### 1.497 bum7\_filestructure

Function: FileStructure

---

Syntax : Fs.l=FileStructure

Description:

Returns a pointer to the req file requester structure

### 1.498 bum7\_getstring\$

Function: GetString\$

---

Syntax : String\$=GetString\$(Title\$,Default\$,Visable size,Max length)

---



**Description:**

This brings up a string requester allowing the user to enter a string  
The maximum length and the visible length are set with Max length and  
Visible size The default string must have a maximum length of at least  
Max length Returns a null string if cancel is selected

MaxLen d\$=40

s\$=GetString\$("Type something",d\$,30,40)

**1.499 bum7\_gfxbase**

Function: Gfx\_Base

---

Syntax : gl.l=Gfx\_Base

**Description:**

This Returns pointer to Graphics.Library used in jsr calls

**1.500 bum7\_intbase**

Function: Int\_Base

---

Syntax : il.l=Int\_Base

**Description:**

This Returns pointer to Intuition.Library used in jsr calls

**1.501 bum7\_maxselect\$**

Statement: MaxSelect\$

---

Syntax : Path\$=MaxSelect\$(Title\$,File\$,Path\$,Flags,number of files)

Select the number of files that can be selected with the extended selector  
see ReqFile Requestor for more information

**1.502 bum7\_nextfile\$**

Function: NextFile\$

---

Syntax : f\$=NextFile\$

**Description:**

Returns the next file in the extended file structure

---

## 1.503 bum7\_reqcolours\$

Statement: ReqColours

Syntax : ReqColours Text,Detail,Block[,File,Dir,Device[,GadText,GadBox,StringName,StringBox,Frame]]

Description:

Text,Detail and Block are for both the req file requester and the text requester File,Dir,Device,GadText,GadBox,StringName,StringBox and Frame are only for the req file requester

Try changing the colours one at a time to see what they change

ReqColours 1,2,3

ReqColours 1,2,3,3,2,1

ReqColours 1,2,3,3,2,1,1,2,3,4,5

## 1.504 bum7\_reqfilerequest\$

Function: ReqFileRequest\$

Syntax: selectedfile\$=ReqFileRequest\$(Title\$,File\$,Path\$,Flags)

Yes it's another file/font requester, No it won't bring up the blitz requester if it fails the maximum length of File\$ must be 32 and Path\$ must be 132 The Flags are as follows (Clipped from reqbase.i)

|   |               |  |   |
|---|---------------|--|---|
| FRQSHOWINFOB                            | EQU 0 = 1     | ;Set this in Flags if you want .info files to  | ↔ |
| show. They default to hidden.           |               |  |   |
| FRQEXTSELECTB                           | EQU 1 = 2     | ;Set this in Flags if you want extended select | ↔ |
| . Default is not.                       |               |  |   |
| FRQCACHINGB                             | EQU 2 = 4     | ;Set this in Flags if you want directory       | ↔ |
| caching. Default is not.                |               |  |   |
| FRQGETFONTSB                            | EQU 3 = 8     | ;Set this in Flags if you want a font          | ↔ |
| requester rather than a file requester. |               |  |   |
| FRQINFOGADGETB                          | EQU 4 = 16    | ;Set this in Flags if you want a hide-info     | ↔ |
| files gadget.                           |               |  |   |
| FRQHIDEWILDSB                           | EQU 5 = 32    | ;Set this in Flags if you DON'T want 'show'    | ↔ |
| and 'hide' string gadgets.              |               |  |   |
| FRQABSOLUTEXYB                          | EQU 6 = 64    | ;Use absolute x,y positions rather than        | ↔ |
| centering on mouse.                     |               |  |   |
| FRQCACHEPURGEB                          | EQU 7 = 128   | ;Purge the cache whenever the directory date   | ↔ |
| stamp changes if this is set.           |               |  |   |
| FRQNOHALFCACHEB                         | EQU 8 = 256   | ;Don't cache a directory unless it is          | ↔ |
| completely read in when this is set.    |               |  |   |
| FRQNOSORTB                              | EQU 9 = 512   | ;Set this in Flags if you DON'T want sorted    | ↔ |
| directories.                            |               |  |   |
| FRQNODRAGB                              | EQU 10 = 1024 | ;Set this in Flags if you DON'T want a drag    | ↔ |
| bar and depth gadgets.                  |               |  |   |
| FRQSAVINGB                              | EQU 11 = 2048 | ;Set this bit if you are selecting a file to   | ↔ |
| save to.                                |               |  |   |
| FRQLOADINGB                             | EQU 12 = 4096 | ;Set this bit if you are selecting a file(s)   | ↔ |
| to load from.                           |               |  |   |

```

;These two bits (save and load) aren't ←
    currently used for
;anything, but they may be in the future, so ←
    you should
;remember to set them. Also, these bits make ←
    it easier if
;somebody wants to customize the file ←
    requester for their
;machine. They can make it behave differently ←
    for loading
;vs saving.
FRQDIRONLYB      EQU 13 =8192    ;Allow the user to select a directory, rather ←
    than a file.

```

Just add together what you want and use it. EG. 6 is Caching and extended select

Also see: FileReqSize  
FileFilter  
ReqColours\$  
FileStructure  
MaxSelect\$  
NextFile\$

```

MaxLen fl$=32 : MaxLen dr$=132
f$=ReqFileRequest$("Select a file",fl$,dr$,4)

```

FRQEXTSELECTB is not used

Returns a null string if user aborts

## 1.505 bum7\_reqfontsize

Function: ReqFontSize

Syntax : sz=ReqFontSize

This Returns the size of the last font selected with the font requester

## 1.506 bum7\_reqbase

Function: Req\_Base

Syntax : rl.l=Req\_Base

This Returns pointer to Req.Library used in jsr calls

## 1.507 bum7\_rexbase

Function: Rex\_Base

Syntax : rxl.l=Rex\_Base

This Returns pointer to RexttSys.Library I think, It says RexttSysBase in the req library docs

## 1.508 bum7\_textrequest

Function: TextRequest

Syntax : Button=TextRequest(Text,Title,Left Text[, [Middle Text,]Right Text])

This brings up a text requester with Text as the message and Title in the titlebar It can have 1, 2 or 3 buttons to select from The requester's colours can be changed: See ReqColours

Left button

Left and Right buttons

Left, Middle and Right buttons

The text in the buttons is determined by Left Text,Middle Text and Right Text

the value returned is

1 left button

2 middle button

0 right button

Button=TextRequest("I am a simple requester","Blitz Prog","Left","Middle","Right")

## 1.509 bum7\_texttimeout

Statement: TextTimeout

Syntax : TextTimeout Timeout Seconds

Its purpose to set the timeout for the text requester but it don't work yet

## 1.510 bum7\_elmoreinclib

Library Name: elmoreinclib #111

Author: Richard T Elmore, HeadSoft, 126 STATE ST. #20,  
SPEARFISH, SD 57783, USA

Overview:

This is a crippled version of a library which Richard has put a whole

heap of time into. It basically allows you to include compressed object data into your programs which you can unpack at your leisure. Please see the registration material at the bottom of this file if you like what you see. Demo, util and lh.library are in userlibprogs/elmore.

Commands:

|           |              |             |
|-----------|--------------|-------------|
| IncSound  | IncNextShape | FreeIncData |
| IncBitmap | IncText\$    | SaveIncData |
| IncMod    | IncData      |             |
| IncMed    | IncSize      |             |
| IncShape  | IncDataAbs   |             |

Using the Include-Util program

Author's Docs:

ABOUT INCLUDE.ELMORELIB  
=====

The Include library by Richard T. Elmore of HeadSoft Software enables Blitz2 programmers to make stand-alone files that don't require special directories, external IFF files, etc. to run. To achieve this in the most efficient manner possible, the incredible efficiency and speed of the LH.Library is used (in the INCLUDE-UTIL tool, which is freely distributeable.)

At present, the Include library supports Bitmaps, (up to 8 bitplanes!) sound effects, MED music modules, IFF brushes for Blitz2 SHAPES, Blitz2 SHAPES-FILES for multiple shapes, (as created by the SAVESHAPES command or with the SHAPESMAKER utility) entire ASCII text files, or raw binary data which gives the advanced programmer the ability to include other object types or other data such as executeable programs, variable arrays for cosine tables, etc.

The library was designed with Blitz2's INCBIN compiler directive, but may also be used with data loaded with READMEM or similar commands, to conserve disk space when you don't mind having external files, not to mention they will be made next to impossible to "rip" by anyone without the Include Library!

NOTE: Your executeables do NOT require the "lh.library" to run... They will have their own self-contained decrunching routine (which is much faster than the crunching routine in lh.library!)

## 1.511 elmore\_includeutil

USING THE INCLUDE-UTIL PROGRAM  
=====

In order to include the above-mentioned data in your Blitz2 executeables, the original data files must be converted and packed so that the resulting runtime program consumes the least memory possible. This also allows the

data to be stored in public or "fast" memory, not just CHIP ram. The INCLUDE-UTIL program is supplied with the library to convert the data for you.

First, ensure the "LH.Library" file resides in your LIBS: directory. The INCLUDE-UTIL program will crash if it isn't available.

In order to run the program, just click on it's icon, and a custom screen will appear containing icons representing the types of data you wish to convert to includeable data. Note that the ST/NT Module button is ghosted, as this data type is not supported in the public domain release of the library.

You may note there is a gadget to "quit" even though there is also a "close" gadget in the top-left of the main window. Clicking the close-gadget will NOT quit the program, it will merely close the window and screen, then an icon will appear on the Workbench screen. Simply click the icon to reactivate the program. (While in this idle mode, INCLUDE-UTIL uses no processor time and consumes less memory.)

Upon clicking one of the other icons, a file requester will appear prompting you to select a source file (the IFF, text, MOD, whatever) to convert. Note that you may load either IFF brushes \*OR\* BB2 shapes-files in the SHAPES filerequester, the appropriate INCLUDE-OBJECT type will be created.

After the file has been converted to it's INCLUDE-OBJECT form, you will be given a filerequester to SAVE the object with. Note that an INCLUDE-OBJECT extension will be appended to the filename to help you more easily recognise the object types in a directory listing. They are:

|        |  |
|--------|--|
| .ISFX  | - Sound effects  |
| .IBMP  | - Bitmaps  |
| .ISHP  | - Single shapes  |
| .ISHPS | - Multiple shapes  |
| .IMED  | - MED modules  |
| .IBIN  | - Either binary or text (IncText\$, IncDataABS, IncData, etc.) |

The INCLUDE-UTIL program accepts tooltypes for default paths. Then whenever you click on an appropriate gadget the file requester will use the path you prefer. The following keywords identify the paths:

```
SOUNDS=pathname
BITMAPS=pathname
SHAPES=pathname
MODULES=pathname
BINARIES=pathname
SAVE=pathname      (This is the same path for saving all object types)
```

You should keep the name of this utility "INCLUDE-UTIL" or the tooltype preferences will not be available.

A few features are available under OS2.0 and above only: Notably,

---

when you iconify INCLUDE-UTIL, it uses a real appicon, so you can drag objects onto it to have them automatically identified and loaded. You can also simply double-click the icon without dragging anything if you just want to wake the program up.

Now that you have your INCLUDE-OBJECTs, how do you go about making them part of your Blitz2 executeables? It is relatively simple, but you must be careful to follow these guidelines unless you know EXACTLY what you're doing or you'll crash your Amiga!

1. Place a copy of Include.ElmoreLib in your Blitzlibs>Userlibs directory, then optionally create a new DEFLIBS file.
2. Write and debug your program using normal loading routines until you're satisfied with it. No need to use INCLUDE-OBJECTs during debugging, as it will only slow down development. (Before being made executeable, Blitz2 will both load the objects from disk AND decrunch them.)
3. Go to the end of your sourcecode (usually the safest place) and select a different program label for EACH INCLUDE-OBJECT to be decrunched at run-time. Directly following the label, enter INCBIN "filename" which should reference the name you saved the INCLUDE-OBJECT as from INCLUDE-UTIL. See page 8-3 of your Blitz2 reference manual for details on INCBIN and INCDir commands if you're not familiar with them.
4. Ensure you have an "END" statement or some such before your first INCLUDE-OBJECT's label. If program flow continues into the data, you will almost surely have a crash.
5. Replace your Blitz2 DOS-based loading commands with the appropriate Include library versions. It's wise to check the results of those commands that return "success" or "failure" (TRUE or FALSE) so that your program can exit gracefully if there isn't enough memory, etc. when its run.
6. That's all! You should be able to run your program normally, and executeables you create will run fine with graphics, sounds, whatever you want, and \*NO\* external files needed!! Of course since all the data is included in the size of the executeable, it will be much larger than usual. (Size of INCLUDE-OBJECTs+normal executeable size) You may have some success crunching the entire executeable with PowerPacker or similar programs, but if the percentage of INCLUDE-OBJECT data in the executeable is very high, most crunchers will choke on it, since most of the program is already crunched by INCLUDE-UTIL.

## 1.512 bum7\_incsound

Function/Statement: Incsound

Syntax: success=IncSound(Sound#, ?Label)  
IncSound Sound#, ?Label

**Description:**

Ensure you put the question mark before the label name or you'll have errors! The actual include-object should be INCBINed directly after the label, and be careful to put an END statement somewhere above your INCBIN data or you'll crash!

**Example:**

```
If IncSound(0,?Mysound)=False Then End ;Unpack the sound or end!
```

```
Sound 0,15 ;Play it back!
Mousewait ;pause for the user....
End
```

**Mysound:**

```
IncBin "RAM:SoundEffect.isfx"
```

NOTE: In the above example the FUNCTION version was used so you could test it with an IF/THEN statement to see if it was successful... If you don't think you'll need to be so careful, the STATEMENT version would be:

**Example:**

```
IncSound 0,?Mysound ;Unpack the sound (Note no parentheses for
statement!)
Sound 0,15 ;Play it back!
Mousewait ;pause for the user....
End
```

## 1.513 bum7\_incbitmap

Function/Statement: IncBitmap

Syntax: success=IncBitmap(bitmap#,?Label)  
           IncBitmap bitmap# ,?Label

**Description:**

Nearly identical in useage to IncSound (above) Note that if the bitmap already exists, it should be the same dimensions such as 640x256x4 or IncBitmap will return FALSE (for failure) if you don't know for sure, you can let IncBitmap create the bitmap exactly like it was Included by doing FREE BITMAP 0 or some such before you INCBITMAP it.

**Example:**

```
Blitz
If IncBitmap(0,?Mypicture)=0 Then End
Slice 0,32,4
Show 0
Mousewait:end
```

**Mypicture:**

```
IncBin "RAM:Picture.ibmp"
```



### 1.514 bum7\_incmod

Function/Statement: IncMod

Syntax: success=IncMod(ST-NT Module# ,?Label)  
IncMod Module# ,?Label

Description:

Like the above examples, only for music mods. You could then use StartModule etc. just as if you had loaded it from disk.

----- NOTE: This function is a bit buggy, so it has  
been temporarily disabled with this release of  
the library! (Sorry!) -----

### 1.515 bum7\_incmed

Function/Statement: IncMed

Syntax: success=IncMed(MEDModule# ,?Label)  
IncMed MedModule# ,?Label

Description:

For including MED modules. Usage is otherwise the same as IncMod.

### 1.516 bum7\_incshape

Function/Statement: IncShape

Syntax: success=IncShape(Shape# ,?Label[,Cookiecut?])  
IncShape Shape# ,?Label[,Cookiecut?]  
                                    ^^^^  
                                    OPTIONAL DUMMY VALUE

Description:

The one you've been waiting for! Will retrieve the shape# for BLITTING... Along with the command below, IncNextShape, you can even include several shapes in one step! I will be adding multiple shapes as an option in the INCLUDE-UTIL program as well... For now, just INCBIN as many shapes as you want (only need label for the first one)

Note: If you don't need a cookiecut for the shape, you can leave out the CookieCut parameter. Any number placed in the cookiecut parameter will cause a cookiecut to be made for the shape when it is made however. If you plan to do BLITs etc. you should always use the cookiecut.

### 1.517 bum7\_incnextshape

Function: IncNextShape

```
Syntax      : success=IncNextShape  [CookieCut?]
                                     ^^^^^^^^^^^^^^^
                                     OPTIONAL DUMMY VALUE
```

Example:

```
;Include shape #0
  IncShape(0,?Shapes,1)
;Will loop 3 times from shape #1 to #3 in this case
While IncNextShape(1):Wend
;(Do your blitting stuff etc. here)
End

Shapes:
IncBin "Shape0.ISHP"
IncBin "Shape1.ISHP"
IncBin "Shape2.ISHP"
IncBin "Shape3.ISHP"

;(Note this is a FUNCTION only, no statement version)
```

Function/Statement: SaveIncData

---

Syntax: success=SaveIncData (Filename\$,?Label)  
           SaveIncData Filename\$,?Label

Description:

This will write to disk the unpacked version of whatever BINARY include-object you specify. One good use of this is to save programs to RAM and then EXECUTE them, and DELETE them again.

Of course there are hundreds of uses....

```
If SaveIncData("Ram:newfile",?executeable)=0 Then End
Execute_ "Ram:Newfile"
KillFile "Ram:Newfile"
End
```

```
executeable:
IncBin "myprog.ibin"
```

## 1.520 bum7\_incdata

Function: IncData

---

Syntax : Address=IncData(?Label,memory type)

Description:

This allows you to include BINARY data for any number of uses that aren't provided with the other functions. Memory types are:

- 0- Any kind of memory (preferably FAST RAM)
- 2- CHIP RAM ONLY!

This function will return the address of the binary data in memory, or 0 for failure....

Example of including a pure ASM routine object file for execution:

```
asmloc.l=IncData(?mlroutine,0)
Call asmloc
End
```

```
mlroutine:
IncBin "Ram:MLRoutine.IBIN"
```

## 1.521 bum7\_incsiz

Function: IncSize

---

Syntax : size.l=IncSize(?Label)

---

**Description:**

Returns the size in bytes of the BINARY object at the specified label  
Among other uses, you need it if you want to FREE the uncrunched  
binary data. (It will automatically be freed when your program ends)

**1.522 bum7\_freeincdata**

Statement: FreeIncData

-----

Syntax : FreeIncData Size,Address

**Description:**

If you wanted to free up the memory allocated by the above IncData  
function, here is how you'd do it:

```
FreeIncData IncSize(?mlroutine),asmloc
```

**1.523 bum7\_incdataabs**

Function: IncDataAbs

-----

Syntax : bytesize=IncDataAbs(?Label, Destination Address)

**Description:**

```
*****
**                                     **
**  A D V A N C E D :   Use with caution!   **
**                                     **
*****
```

This command will unpack the binary data directly to the area of memory  
you specify, so if you're not sure what you're doing you'll probably  
GURU the Amiga! However, it is very useful to fill arrays, uncrunch data  
directly to Banks, or whatever. Just be careful!

It will return zero for failure, or the number of bytes in the binary  
object. I'll provide a better example of making use of this function  
later.... (Filling up array variables, etc.)

```
InitBank 0,1000,0
size.l=IncDataAbs(?Binary,BankLoc(0))
Mousewait:End
```

Binary:

```
IncBin "binarydata.IBIN"
```

**1.524 bum7\_aaronsiconlib**

Library Name: aaronsiconlib #62

Author : Aaron Koolen, Vision Software,  
15 Day Street,  
Newton, Auckland, NZ

#### OverView:

Not only has Aaron kindly fixed up passing of argumens in our cliargslib but has also donated this library which similar to the Reflective Images version allows access to information from the programs workbench icon.

#### Commands:

```
GetIconInfo
IconTool$
IconSubTool$
IconType
IconStack
IconDefTool$
```

#### Authors Documentation:

AaronsIconLib  
=====

This library is for processing the icon (.info) files. It only provides routines for reading the data from icons, not for writing or creating new icons, which may be added later. It is most useful when used in conjunction with the ArgsLib. You can set the maximum number of allowed icon info's in the options. Also to free an IconInfo object, after a GetIconInfo use Free IconInfo #

### 1.525 aaron\_geticoninfo

Function: GetIconInfo

Syntax: boolean.w=GetIconInfo(icon#,iconname\$)

#### Description:

This examines a .info file so you can get information about it. 'iconname\$' is the name of the icon without the .info suffix and icon# is the number of the IconInfo object you want to put the data under. It will return FALSE (0) if it failed, or TRUE (-1) if it succeeded.

### 1.526 aaron\_icontool\$

Function: IconTool\$

Syntax: tool\$=IconTool\$(icon#,toolname\$)

**Description:**

Returns the respective data of the tooltype specified by 'toolname\$' of IconInfo object icon#.

EG

```
If IconTool$(0,"CX_POPUP")="YES" Then GOSUB PopUpWindow
```

**1.527 aaron\_iconsubtool\$**

Function: IconSubTool\$

---

Syntax: boolean.w=IconSubTool\$(toolname\$,subtool\$)

**Description:**

Returns TRUE (-1) or FALSE (0) if the sub tool type 'subtool\$' exists within the tool 'toolname\$'

EG

```
If IconSubTool$(0,IconTool$(0,"FILETYPE"),"ILBM") Then file type of
file was ILBM.
```

A Subtool (My word) is one that resides in a tool type but is separated by bars (|). EG

```
FILETYPE=PaintProgram|ILBM (PaintProgram and ILBM are "Sub Tools")
```

IconTool\$ will return the PaintProgram|ILBM part and you can then use IconSubtool\$ to see if things like ILBM or PaintProgram exist in that string.

NOTE: This does not require the passing of an IconInfo object, it simply requires 2 strings, so you can use it for other things too.

**1.528 aaron\_icontype**

Function: IconType

---

Syntax: type.w=IconType(icon#)

**Description:**

Returns the type of IconInfo object icon#.

EG NPrint IconType(0)

'type' is one of the list from workbench/workbench.bb2.

**1.529 aaron\_iconstack**

Function: IconStack

---

Syntax: stackSize.l=IconStack(icon#)

Description:

Returns the stack size setting of the icon.

### 1.530 aaron\_icondeftool\$

Function: IconDefTool\$

---

Syntax: deftool\$.w=IconDefTool\$(icon#)

Description:

Returns the default tool of the icon.

EG NPrint IconDefTool\$(icon#)

May print something like "blitz2:blitz2" if icon# references a Blitz2 source program.

### 1.531 bum7\_newcommands

|                  |                |
|------------------|----------------|
| AllocMem         | FreeMem        |
| Bank             | FromCLI        |
| BlockScroll      | GameB          |
| ClipBlitMode     | GTArrowSize    |
| CustomColors     | GTStatus       |
| CustomString     | InitPalette    |
| CyclePalette     | InitShape      |
| DecodeILBM       | LoadBank       |
| DecodeMedModule  | NumPars        |
| DecodePalette    | PaletteRange   |
| DecodeShapes     | Par\$          |
| DecodeSound      | ParPath\$      |
| DisplayDblScan   | PopInput       |
| DisplayRainbow   | PopOutput      |
| DisplayRGB       | ReadSerialMem  |
| DisplayScroll    | SavePalette    |
| DisplayUser      | SetPeriod      |
| DuplicatePalette | WriteSerialMem |
| FadePalette      |                |

### 1.532 bum7\_bank

Function: Bank

---

Syntax : Bank(Bank#)

---

Returns the memory location of the given memory Bank, replaces the older and more stupidly named BankLoc command.

### 1.533 bum7\_blockscroll

Statement: BlockScroll

---

Syntax : BlockScroll X1,Y1,Width,Height,X2,Y2[,BitMap#]

library: scrolllib

Description:

Same as the Scroll command except that BlockScroll is much faster but only works with 16 bit aligned areas. This means that X1, X2 and Width must all be multiples of 16. Useful for block scrolling routines that render the same blocks to both sides of the display, the programmer can now choose to render just one set and then copy the result to the other side with the BlockScroll command.

### 1.534 bum7\_clipblitmode

Statement: ClipBlitMode

---

Syntax : ClipBlitMode BPLCON0

Library : 2dlib

Description:

Same as BlitMode except applies to the ClipBlit command. Another oversight now fixed.

### 1.535 bum7\_customcolors

Statement: CustomColors

---

Syntax : CustomColors CopList#,CCOffset,YPos,Palette,startcol,numcols

Library : displaylib

Using the custom copper space in a display, CustomColors will alter the displays palette at the given YPos. The number of customcops required is either 2+numcols for ecs displays and 2+n+n+n/16 for aga displays. In aga, numcols must be a multiple of 32.

Note that large AGA palette changes may take several lines of the display to be complete.

### 1.536 bum7\_customstring



Statement: CustomString

---

Syntax : CustomString CopList#,CCOffset,YPos,Copper\$  
Library : displaylib

Description:

CustomString allows the user to insert their own copper commands (contained in a string) into the display's copper list at a given vertical position. The amount of space required is equal to the number of copper instructions in the Copper\$ (length of string divide by 4) plus 2 which of course have to be allocated with InitCopList before CustomString is used.

### 1.537 bum7\_cyclepalette

Statement: CyclePalette

---

Syntax : CyclePalette Palette#  
Library : palettelib

Description:

CyclePalette uses the standard color cycling parameters in the palette object to cycle the colors. Unlike the Cycle command which copied the resulting palette to the current screen the CyclePalette command just modifies the palette object and can hence be used with the DisplayBitmap command in the new Display library.

### 1.538 bum7\_decodeilbm

Statement: DecodeILBM

---

Syntax : DecodeILBM BitMap#,MemoryLocation  
Library : ilbmifflib

Description:

A very fast method of unpacking standard iffilbm data to a bitmap. Not only does this command allow a faster method of loading standard IFF files but allows the programmer to "incbin" iff pictures in their programs. See the discussion above for using DecodeILBM on both files and included memory.

### 1.539 bum7\_decodemodule

Statement: DecodeMedModule

---

Syntax : DecodeMedModule MedModule#,MemoryLocation  
Library : medlib

Description:

DecodeMedModule replaces the cludgedmodule, as med modules are not

---

packed but used raw, DecodeMedModule simply checks to see the memorylocation passed is in ChipMem (if not it copies the data to chip) and points the Blitz2 MedModule object to that memory.

### 1.540 bum7\_decodepalette

Statement: DecodePalette

---

Syntax : DecodePalette Palette#,MemoryLocation[,Palette Offset]  
Library : palettelib

Description:

DecodePalette allows the programmer to unpack included iff palette information to Blitz2 palette objects.

### 1.541 bum7\_decodeshapes

Statament: DecodeShapes

---

Syntax : DecodeShapes Shape#[,Shape#],MemoryLocation  
Library : shapeslib

Description:

DecodeShapes, similar to DecodeMedModule ensures the data is in chip and then configures the Shape object(s) to point to the data.

### 1.542 bum7\_decodesound

Statement: DecodeSound

---

Syntax : DecodeSound Sound#,MemoryLocation  
Library : audiolib

Description:

DecodeSound similar to the other new Decode commands allows the programmer to include sound files within their program's object code.

### 1.543 bum7\_displaydblscan

Statement: DisplayDblScan

---

Syntax : DisplayDblScan CopList#,Mode[,copoffset]  
Library : displaylib

Description:

DisplayDblScan is used to divide the vertical resolution of the display by 2,4,8 or 16 using Modes 1,2,3 and 4. This is most useful for fast bitmap

---

based zooms. A Mode of 0 will return the display to 100% magnification.

As with the DisplayRainbow, DisplayRGB, DisplayUser and DisplayScroll commands DisplayDblScan uses the new line by line copper control of the display library. To initialise this mode a negative parameter is used in the CustomCops parameter of the InitCopList command. DisplayDblScan requires 2 copper instructions per line (make CustomCops=-2).

### 1.544 bum7\_displayrainbow

Statement: DisplayRainbow

---

Syntax : DisplayRainbow CopList#,Register,Palette[,copoffset]  
Library : displaylib

Description:

DisplayRainbow is used to alter a certain colour register vertically down a display. It simple maps each colour in a palette to the corresponding vertical position of the display. ECS displays require one copper instruction per line while AGA displays require 4.

### 1.545 bum7\_displayrgb

Statement: DisplayRGB

---

Syntax : DisplayRGB CopList#,Register,line,r,g,b[,copoffset]  
Library : displaylib

Description:

DisplayRGB is a single line version of DisplayRainbow allowing the programmer to alter any register of any particular line. As with DisplayRainbow ECS displays require 1 copper instruction while AGA requires 4.

### 1.546 bum7\_displayscroll

Statement: DisplayScroll

---

Statement: DisplayScroll CopList#,&xpos.q(n),&xpos.q(n)[,Offset]  
Library : displaylib

Description:

DisplayScroll allows the program to dynamically display any part of a bitmap on any line of the display. DisplayScroll should always follow the DisplayBitMap command. The parameters are two arrays holding a list of xoffsets that represent the difference in horizontal position from the line above. AGA machines are able to use the fractional part of each entry for super hiresolution positioning of the bitmap. Three instructions per line are required for the DisplayScroll command.

---

### 1.547 bum7\_displayuser

Statement: DisplayUser

---

Syntax : DisplayUser CopList#,Line,String[,Offset]  
Library : displaylib

Description:

DisplayUser allows the programmer to use their own Copper\$ at any line of the display. Of course copper instructions have to be allocated with the number of copper instructions in the InitCopList multiplied by -1.

### 1.548 bum7\_duplicatepalette

Statement: DuplicatePalette

---

Syntax : DuplicatePalette SrcPalette#,DestPalette#  
Library : palettelib

Description:

DuplicatePalette simply creates a new Palette which exactly matches the SrcPalette.

### 1.549 bum7\_fadepalette

Statement: FadePalette

---

Syntax : FadePalette SrcPalette#,DestPalette#,Brightness.q  
Library : palettelib

Description:

FadePalette multiplies all colours in a Palette by the Brightness argument and places the result in the DestPalette.

### 1.550 bum7\_freemem

Statement: FreeMem

---

Syntax : FreeMem location,size  
Library : banklib

Description:

Used to free any memory allocated with the AllocMem command.

### 1.551 bum7\_fromcli

Function: FromCLI

---

Function: FromCLI  
Library : cliargslib

Description:

Returns TRUE (-1) if your program was run from the CLI, or FALSE (0) if run from the WorkBench.

## 1.552 bum7\_gameb

Function: GameB

---

Syntax : GameB(port#)  
Library : gameiolib

Description:

Returns button state of cd32 style game controllers - values returned are:

1 = play/pause  
2 = reverse  
4 = forward  
8 = green  
16 = yellow  
32 = red  
64 = blue

If more than one button is held down, values are added together. For example, a value of 6 means both the forward (4) and reverse (2) buttons are held down. Use an 'and' to isolate the status of a single button, like this -

```
;check RED button on port 1...  
;  
if gameb(1) & 32  
  ;  
  ;RED button is down...  
;  
else  
  ;  
  ;RED button is NOT down...  
;  
endif
```

## 1.553 bum7\_gtarrowsize

Statement: GTArrowSize

---

Syntax : GTArrowSize size  
Library : bbgllib

---

**Description:**

Allows the size of GTScroller arrows to be preset. Default size is 16.

**1.554 bum7\_gtstatus**

Function: GTStatus

---

Syntax : GTStatus(GTList#,Id)

Library : bbgplib

**Description:**

GTStatus returns the status of and gadtools toggle gadgets, a value of 1 means the the gadget is selected, 0 deselected.

**1.555 bum7\_initpalette**

Statement: InitPalette

---

Syntax : InitPalette Palette#,NumColors

Library : palettelib

**Description:**

InitPalette simply initialises a palette object to hold NumColors. All colors will be set to black.

**1.556 bum7\_initshape**

Statement: InitShape

---

Syntax : InitShape Shape#,Width,Height,Depth

Library : shapelib

**Description:**

InitShape has been added to simple create blank shape objects. Programmers who make a habit of using ShapesBitMap to render graphics to a shape object will appreciate this one for sure.

**1.557 bum7\_loadbank**

Statement: LoadBank

---

Syntax : LoadBank Bank#,FileName\$[,MemType]

**Description:**

The LoadBank command has been modified, instead of having to initialise the bank before loading a file, LoadBank will now initialise the bank to the size of the file if it is not already large enough or has not been initialised at all.

---

## 1.558 bum7\_numpars

Function: NumPars

---

Syntax : NumPars  
Library : cliargslib

Description:  
Returns the number of parameters passed to your program.

## 1.559 bum7\_paletteRange

Statement: PaletteRange

---

Syntax : PaletteRange Palette#,StartCol,EndCol,r0,g0,b0,r1,g1,b1  
Library : palettelib

Description:  
PaletteRange creates a spread of colors within a palette. Similar to  
DPaint's spread function PaletteRange takes a start and end colour and  
creates the color tweens between them.

## 1.560 bum7\_par\$

Function: Par\$

---

Syntax : Par\$(parameter#)  
Library : cliargslib

Description:  
Returns the string value of a parameter.

NOTE: If the parameter asked for is a directory/device/volume etc  
(IE NOT A FILE) then Par\$(#) will return an empty string. This is a one  
way you can check to see if a file was passed or not.

## 1.561 bum7\_parpath\$

Function: ParPath\$

---

Syntax : ParPath\$ (parameter,type)  
Library : cliargslib

Description:  
This returns the path that this parameter resides in. 'type' specifies  
how you want the path returned.

0 You want only the directory of the parameter returned.  
1 You want the directory along with the parameter name returned.

---

EG:

If you passed the parameter "FRED" to your program from WorkBench, and FRED resides in the directory "work:mystuff/myprograms" then ParPath\$(0,0) will return "work:mystuff/myprograms", but ParPath\$(0,1) will return "work:mystuff/myprograms/FRED".

#### CAVEAT

The way WB handles argument passing of directories is different to that of files. When a directory is passed as an argument, ArgsLib gets an empty string for the name, and the directory string holds the path to the passed directory AND the directory name itself. EG

Passing the blitz2 directory to a program will result in:

Par\$(x)        Being an empty string.  
ParPath\$(x,0)    Being something like work:Basic/blitz2.  
ParPath\$(x,1) Being work:Basic/blitz2/

YES! The / is appended! This is because to keep things simpler, and more uniform ParPath\$(x,1) Is the concatenation of

1) The directory string passed by Workbench

AND

2) A / followed by the name given by WorkBench.

So you can see why the / followed by the empty string occurs.

The easy way around this is simply to check Par\$(x), if it is empty, then use ParPath\$(x,0), if it isn't (IE a file was passed) use ParPath\$(x,1) and you will have the entire pathname of the file OR directory.

See the demo program, which handles both cases.

NOTE 2: Is only useable from WorkBench, you will get an error if your program was run from the CLI and you try to call ParPath\$.

## 1.562 bum7\_popinput

Statement: PopInput & PopOutput

-----  
Library : inputoutputlib

#### Description:

After input or output has been re-directed (eg using windowoutput/fileoutput), these two commands may be used to return the channel to it's previous condition.

## 1.563 bum7\_readserialmem

---



Statement: ReadSerialMem

---

Syntax : ReadSerialMem Unit#,Address,Length  
Library : seriallib

Description:

ReadSerialMem will fill the given memory space with data from the given serial port.

### 1.564 bum7\_savepalette

Statement: SavePalette

---

Syntax : SavePalette Palette#,FileName\$  
Library : iffmakelib

Description:

Creates a standard IFF "CMAP" file using the given Palette's colors.

### 1.565 bum7\_setperiod

Statement: SetPeriod

---

Syntax : SetPeriod Sound#,Period  
Library : audiolib

Description:

Hmmm, not sure why we never included this command in the original audiolib, SetPeriod simply allows the user to override the frequency information (period) of the sound object after it has been loaded. To alter a sound's pitch while playing programmers should hit the audio hardware direct (hardware locations are listed at the back of the reference manual).

### 1.566 bum7\_writeserialmem

Statement: WriteSerialMem

---

Syntax : WriteSerialMem Unit#,Address,Length  
Library : seriallib

Description:

WriteSerialMem send the given memory space out the given serial port.

### 1.567 allcommands

---

All the commands are now sorted, few that was a lot of work!  
But what the hell, it's finished now (until a new BUM is released)

Choose a letter:

|   |   |
|---|---|
| A | N |
| B | O |
| C | P |
| D | Q |
| E | R |
| F | S |
| G | T |
| H | U |
| I | V |
| J | W |
| K | X |
| L | Y |
| M | Z |

## 1.568 ind\_a

- A -

|                |                    |
|----------------|--------------------|
| Activescreen   | AnimLoop           |
| ActiveWindow   | AppEvent           |
| AddAppIcon     | AppIconEvent       |
| AddAppMenu     | AppIconFile        |
| AddAppWindow   | AppIconHit         |
| ADDValue       | AppMenuEvent       |
| AGABlue        | AppMenuFile        |
| AGAFillPalette | AppMenuHit         |
| AGAGreen       | AppWindowEvent     |
| AGAPalBlue     | AppWindowFile      |
| AGAPalGreen    | ASLFileRequest     |
| AGAPalRed      | ASLFontRequest     |
| AGAPalRGB      | ASLScreenRequest\$ |
| AGARed         | AttachGTLList      |
| AGARGB         | Avg                |
| AllFire        | Avg.L              |
| AllocMem       | Avg.Q              |
| AnalyzeDisk    |                    |

## 1.569 ind\_b

- B -

Bank  
BeepScreen  
Bin#  
BitMapToWindow  
BitPlanesBitMap

BlitColl  
BLoad  
Block  
BlockScroll  
BSave  
ButtonGroup  
ButtonId

## 1.570 ind\_c

- C -

|                |                 |              |
|----------------|-----------------|--------------|
| CacheOff       | CloseDisk       | CrMDecrunch  |
| CachePCF       | CloseScreen     | CustomColors |
| CharCount      | CloseSerial     | CustomString |
| ChDir          | CloseWindow     | CxAppear     |
| CheckAGA       | CludgeShapes    | CxChangeList |
| CheckPrt       | CludgeSound     | CxDisable    |
| Checksum       | ColourRequest   | CxDisAppear  |
| ChipFree       | CommoditieBase  | CxEnable     |
| ChunkHeader    | CommodityEvent  | CxKill       |
| ChunkyToPlanar | Con_Base        | CxUnique     |
| Cipher\$       | CopyByte        | CyclePalette |
| ClearBitmap    | CopyFile        |              |
| ClearRexxMsg   | CopyLong        |              |
| ClearToolTypes | CopyWord        |              |
| ClickMouse     | CreateArgString |              |
| ClipBlit       | CreateDisplay   |              |
| ClipBlitMode   | CreateMsgPort   |              |
| CloseConsole   | CreateRexxMsg   |              |

## 1.571 ind\_d

- D -

|                 |                 |                  |
|-----------------|-----------------|------------------|
| Date\$          | Derez           | DisplayUser      |
| DateFormat      | Disable         | DosBase          |
| Days            | DiskBlocks      | Dos_Base         |
| DecodeILBM      | DiskCapacity    | DuplicatePalette |
| DecodeMedModule | DiskErrs        |                  |
| DecodePalette   | DiskfontBase    |                  |
| DecodeShapes    | DiskFree        |                  |
| DecodeSound     | DiskUnit        |                  |
| Decrypt         | DiskUsed        |                  |
| DeIce           | DisplayAdjust   |                  |
| DelAppIcon      | DisplayBitmap   |                  |
| DelAppMenu      | DisplayControls |                  |
| DelAppWindow    | DisplayDblScan  |                  |
| DeleteArgString | DisplayPalette  |                  |
| DeleteMsgPort   | DisplayRainbow  |                  |
| DeleteRexxMsg   | DisplayRGB      |                  |
| Deplode         | DisplayScroll   |                  |

Depth

DisplaySprite

**1.572 ind\_e**

- E -

|                    |                   |
|--------------------|-------------------|
| EasyRequest        | ExchangeDisAble   |
| Enable             | ExchangeDisAppear |
| Encrypt            | ExchangeEnable    |
| EntryBit\$         | ExchangeKill      |
| EntryComment\$     | ExchangeMessage   |
| EntryDate          | ExchangeUnique    |
| EntryDir           | ExecVersion       |
| EntryHour          | Exists            |
| EntryMins          |                   |
| EntryName\$        |                   |
| EntrySecs          |                   |
| EntrySize          |                   |
| Erase              |                   |
| EraseAll           |                   |
| EventCode          |                   |
| EventQualifier     |                   |
| ExchangeAppear     |                   |
| ExchangeChangeList |                   |

**1.573 ind\_f**

- F -

|                |                |               |
|----------------|----------------|---------------|
| FadeInBitmap   | FNSLength      | FreeIncData   |
| FadePalette    | FNSLoad        | FreeMem       |
| FastFree       | FNSOrigin      | FreePCFCache  |
| FFPBase        | FNSOutput      | FreeZoneTable |
| FileFilter     | FNSPrefs       | Freq          |
| FileReqSize    | FNSPrint       | FromCLI       |
| FileSize       | FNSSetTab      |               |
| FileStructure  | FNSSlot        |               |
| FillMem        | FNSUnderline   |               |
| FillPalette    | FNSUnLoad      |               |
| FillRexxMsg    | FNSVersion     |               |
| FindToolNumber | FNSWidth       |               |
| FindToolType   | ForceNTSC      |               |
| FindToolValue  | ForcePAL       |               |
| FNSClip        | FormatTrack    |               |
| FNSClipOutput  | Frames         |               |
| FNSHeight      | FreeCatalog    |               |
| FNSInk         | FreeIconObject |               |

**1.574 ind\_g**

- G -

|                 |              |
|-----------------|--------------|
| GagetStatus     | GTChangeList |
| GameB           | GTGadPtr     |
| GetIconInfo     | GTSetAttrs   |
| GetIconObject   | GTStatus     |
| GetLocaleStr    | GTags        |
| GetMedInstr     |              |
| GetMedNote      |              |
| GetMedVolume    |              |
| GetResultString |              |
| GetRexxCommand  |              |
| GetRexxResult   |              |
| GetString\$     |              |
| GetSuperBitmap  |              |
| GetWheel        |              |
| Gfx_Base        |              |
| GraphicsBase    |              |
| GTArrowSize     |              |
| GTBevelBox      |              |

## 1.575 ind\_h

- H -

HardCopy  
Hex#  
HideScreen  
HotKeyHit  
Hours

## 1.576 ind\_i

- I -

|                 |                  |
|-----------------|------------------|
| IconBase        | IncShape         |
| IconDefaultTool | IncSize          |
| IconDefTool\$   | IncSound         |
| IconRender      | IncText\$        |
| IconStack       | InitAnim         |
| IconSubTool\$   | InitCopList      |
| IconTool\$      | InitPalette      |
| IconType        | InitShape        |
| ILBMGrab        | InitZoomXY       |
| ILBMPalette     | InstallFNS       |
| ILBMViewMode    | IntuitionBase    |
| Implode         | Int_Base         |
| IncBitmap       | IsEven           |
| IncData         | IsLocale         |
| IncDataAbs      | IsReqtoolsActive |
| IncMed          | IsRexxMsg        |

IncMod  
IncNextShape

## 1.577 ind\_j

- J -

JFire  
JHoriz  
JoyC  
JumpMed  
JVert

## 1.578 ind\_k

- K -

KeyCode

## 1.579 ind\_l

- L -

Largest  
Largest.l  
Largest.q  
LargestFree  
Length  
Lisa  
LoadAnim  
LoadFont  
LoadIFF  
LoadIFF  
LoadMedModule  
LoadPCF  
LoadShape

## 1.580 ind\_m

- M -

MakeCommodity  
MakeDir  
MatchToolValue  
Max  
MemFree  
Min

---

Mins  
Months  
MoreEntries  
MotorOff  
MotorOn  
MoveScreen

## 1.581 ind\_n

- N -

NameFile  
NewPaletteMode  
NewToolType  
NewZoneTable  
NextBank  
NextFile\$  
NextFrame  
NPrintCon  
Null  
NumDays  
NumPars

## 1.582 ind\_o

- O -

OpenConsole  
OpenDisk  
OpenSerial

## 1.583 ind\_p

- P -

|              |                     |
|--------------|---------------------|
| PalAdjust    | PLoad               |
| PalBlue      | Poly                |
| PaletteInfo  | Polyf               |
| PaletteRange | PopInput            |
| PalGreen     | PopOutput           |
| PalRed       | PositionSuperBitmap |
| Par\$        | PPDecrunch          |
| ParPath\$    | PrintCon            |
| PathLock     | Processor           |
| PCFDepth     | PrtCommand          |
| PCFHeight    | PrtText             |
| PCFInfo      | PutIconObject       |
| PCFVersion   | PutSuperBitmap      |
| PCFWidth     |                     |
| Peekto\$     |                     |

PhoneticSpeak  
PlanarToChunky  
PlayMed

## 1.584 ind\_q

- Q -

Quiet

## 1.585 ind\_r

- R -

|                  |                            |                         |   |
|------------------|----------------------------|-------------------------|---|
| ReadSector       | Request                    | RTEZFlagsRequest        | ↔ |
| RTRequest        |                            |                         |   |
| ReadSerial       | Req_Base                   | RTEZFontRequest         | ↔ |
| RTRevision       |                            |                         |   |
| ReadSerialMem    | Reserve                    | RTEZFreePattern         | ↔ |
| RTUnlockWindow   |                            |                         |   |
| ReadSerialMem    | ResetTimer                 | RTEZGetLong             | ↔ |
| RTVersion        |                            |                         |   |
| ReadSerialString | RexxError                  | RTEZGetLongRange        | ↔ |
| Runerrsoff       |                            |                         |   |
| Reboot           | RexxEvent                  | RTEZGetString           | ↔ |
| Runerrson        |                            |                         |   |
| ReduceX2         | RexxsysBase                | RTEZLoadFile            |   |
| ReMap            | Rex_Base                   | RTEZMultiLoadFile       |   |
| RemoveFNS        | RIAnimInit                 | RTEZPaletteRequest      |   |
| Rename           | RINextAnimFrame            | RTEZPathRequest         |   |
| Repeats          | Rrandomize                 | RTEZRequest             |   |
| ReplyRexxMsg     | Rrnd                       | RTEZRNextPathEntry      |   |
| ReqColours       | RTASyncPaletteRequest      | RTEZSaveFile            |   |
| ReqFileLoc       | RTASyncRequest             | RTEZScreenModeRequest   |   |
| ReqFileRequest   | RTCheckASyncPaletteRequest | RTEZSetDefaultDirectory |   |
| ReqFileRequest\$ | RTCheckASyncRequest        | RTEZSetPattern          |   |
| ReqFontSize      | RTEndASyncPaletteRequest   | RTFileRequest           |   |
| ReqOutput        | RTEndASyncRequest          | RTLckWindow             |   |

## 1.586 ind\_s

- S -

|              |                 |                |
|--------------|-----------------|----------------|
| SaveIncData  | SetMedVolume    | Space\$        |
| SavePalette  | SetPeriod       | Speak          |
| ScreenHeight | SetSerialBuffer | SpriteMode     |
| ScreenTags   | SetSerialLens   | Start          |
| ScreenWidth  | SetSerialParams | StartMedModule |
| SearchBegin  | SetStatus       | StopMed        |
| SearchEnd    | SetToolValue    | SystemDate     |



|                 |                |
|-----------------|----------------|
| SearchString    | SetVoice       |
| Secs            | Setzone        |
| SendRexxCommand | ShapeGadget    |
| SerialEvent     | ShapeToIcon    |
| SetBPLCON0      | ShowBitmap     |
| SetCopyBuffer   | ShowPalette    |
| SetGadgetStatus | ShowRequestors |
| SetHotKey       | Smallest       |
| SetIconHit      | Smallest.l     |
| SetIconType     | Smallest.q     |
| SetMedMask      | SortList       |

## 1.587 ind\_t

- T -

TextRequest  
TextTimeout  
Ticks  
Timer  
Translate\$

## 1.588 ind\_u

- U -

UnpackIFF  
UnpackPCF  
UseCatalog  
UseZoneTable

## 1.589 ind\_v

- V -

VoiceLoc  
Vpos  
VwaitPos

## 1.590 ind\_w

- W -

Wait  
WaitFor  
WBDepth  
WBHeight

---

WBlit  
WBViewMode  
WBWidth  
WeekDay  
Window  
WPrintScroll  
WriteBoot  
WriteSector  
WriteSerial  
WriteSerialMem  
WriteSerialMem  
WriteSerialString  
WTitle

## 1.591 ind\_x

- X -

Xor  
XOR

## 1.592 ind\_y

- Y -

Years

## 1.593 ind\_z

- Z -

Zone  
ZoneInit  
ZoneTable  
ZoneTableSize  
ZoneTest  
ZoomX2  
ZoomX4  
ZoomX8  
ZoomXY

---