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                        Master Of Magic
                   The Complete Strategy Guide

                         April 17, 2009
                           Version 4.1

                   Revised by:  Dan Simpson
                        Email:  dsimpson.faqs@gmail.com

              Original Author:  Bryan Lee Jacobson
                        Email:  Unknown
```

   If emailing me, use this subject: Master of Magic v 4.1

        (Emails that don't use this subject will be ignored)

                          Email Policy: (read before emailing me!)

        If you see any mistakes, or have anything that you want to add
        please email me! I will, of course, give you full credit for
        your addition, and be eternally grateful to you. Email addresses
        are not posted in the FAQ, unless you specifically state that
        you want it to be.

                                      Notes

The most recent version of this FAQ can be found at:

   http://www.gamefaqs.com/

Revision Notes: I (Dan Simpson) did not write this faq, I am merely updating
it. The original author was Bryan Jacobson, but I was unable to contact
him. I am not taking credit for writing this, just for revising a few
things here and there, and making a few format changes. Everything changed
in the FAQ itself will have a little DS by it to signify the change.
(except for format changes) [DS]

The many additions from Dirk Pellet are annotated with a [DP].

If you are a webmaster and wish to post this on your web page, please email
me first. And if you do post this FAQ on your site, please make an attempt
to keep it up to date. There is nothing worse than getting emails from
people who saw an old version asking about things that are already in the
newer versions. Well, maybe there are worse things, but it IS annoying!

Welcome to the Master of Magic (MOM) FAQ. This FAQ is largely an
accumulation of "wisdom of the net" posted by various authors. Thanks to
all who posted. This FAQ also draws on an earlier FAQ, based on MOM v1.1,
written by Dave Chaloux. I salute Dave for his admirable work. Material
from Dave's FAQ is attributed with a "DC".

Because MOM 1.31 is fairly new, some of this FAQ is based on earlier
versions of MOM. I've tried to fix or remove anything not consistent with
MOM 1.31, but some pre-MOM-1.31-isms probably remain.

Note: Text is not identical to original posts. Often I merge similar ideas
from several posts, but may only attribute the primary source.

Many thanks to my great reviewers, including: Jay Barnett, Rob Buchner,
Dave Chaloux, Dan Hite, Nai-Chi Lee, Brian Wade, Rhonda Wilson, and
"DriveBy Billy" (spido@clark.net). Any mistakes in this FAQ are the
responsibility of the editor, Bryan Jacobson. (or of its new editor, Dan
Simpson)

Sources are attributed in square brackets, and in the case of Dave Chaloux
[DC] and myself [BLJ], I just use initials.

  _____
  What's New in 4.1:

      Added a section on a new mulitplayer rebuild of MOM in the new section
      12.3. Updated information on MOM2, there won't be one, but Stardock is
      making a game in the same vein. Added Eli Dupree's account on attempting
      the fantasy hard game in section 10.15.I. Added Zack Eskins' flying
      defenders trick. Added lots and lots of comments from MadKaugh. Replaced
      "What does F10 do?" section with "Keyboard Commands." Updated the patch
      link. Some other small edits.

    For a complete Version History, check out the Final Words Section at the end
    of the FAQ.

Table Of Contents

===
1) Introduction
===

   This section introduces MOM, and provides basic information, such as where to
   get the latest patch.

1.1) What is Master of Magic (MOM)?

In Master of Magic (MOM), you begin as a humble wizard, ruler of a small
hamlet and a few soldiers. At first your magical powers are weak, but will
grow as you research spells and acquire magical resources. You send out
colonies to expand your borders. Your armies and magical creatures search
for treasure, expand your empire by conquest, and defend your realm from
rampaging monsters and enemy wizards. As your fame grows, powerful heros
join your cause. To win you must either defeat all the other wizards or
become powerful enough to cast the awesome Spell of Mastery. Of course, the
other Wizards are trying to defeat you.

There are 6 types of magic, and hundreds of spells. There are 14 races
to choose from, play against, and conquer. You can design your own wizard,
selecting types of magic and special abilities, or select one of 14 wizards
provided. You will be able to produce many different types of soldiers and
fighting units, and summon many different types of magical creatures. There
are more than 30 different heros with diverse abilities that may appear to
aid your cause.

MOM is programmed by SIMTEX for MicroProse. MOM and another
SIMTEX/MicroProse game, Master of Orion (MOO), have several features in
common (diplomacy, colonization, research, economic development). MOM also
has similarities with such games as CIV and Warlords II. MOM has a color
based magic system that reminds some of "Magic: The Gathering".   [BLJ, DC]

1.2) What is the latest patch? Where can I get it?

The latest patch is version 1.31. It's size is 1499642 and it was released
in March 1995. Previous versions of MOM were 1.0, 1.01, 1.1, 1.2 and 1.3.
1.2 fixed a lot of bugs. 1.3 fixed a lot of bugs, made the computer wizards
smarter and more aggressive and made the Impossible level a lot harder by
giving computer wizards a additional production advantages. The 1.31 patch
came out soon after the 1.3 patch, and was a fairly minor revision. It fixed
some sound related crashes that severely impacted some people. It also fixed
the "auto-razing" of undefended hamlets. Finally, 1.31 can be installed on
to any MOM installation, while 1.3 was an incremental patch that required 1.2
to first be installed.

This FAQ assumes you are running MOM 1.31. Look in the Game Save/Load/Quit
screen. You should see 1.31 in small print at the bottom. If you don't see
1.31, you are not running 1.31. Get it! It is far better than the earlier
versions. This FAQ will not discuss problems in versions of MOM prior to
1.31.

The 1.31 patch is available in the following places:

   http://www.abandonia.com/en/games/189

1.3) How can I get the 1.31 patch onto diskettes?

The 1.31 patch is too big to fit on a 1.4MB diskette. If you can download it
directly to your hard disk, that's not a problem. If you have to put it on a
diskette, here are some suggestions.

  A) Use a diskette formatting utility (such as MaxiForm) to get 1.6MB
     out of a 3.5" DSHD diskette.
  B) Use the disk-spanning option (-&) in PKZIP 2.04G to split the file
     across two diskettes. The command to use is:
      pkzip -& -e0 a:mom_updt mom131.zip
      On the destination machine, go into your MOM game directory and

```
        reconstruct the original MOM131.ZIP file:
      pkunzip a:mom_updt
       And then install the patch:
      pkunzip mom131
   C) Use WinZip as it has auto-disk spanning properties.  Create the zip file
      on the disk, and add the file, then follow the instructions. [DS]
   D) Use a file utility (such as ZipSplit or Cross) to break the zip file
      into smaller chunks.
   E) Extract and then delete some files from the zip file.  For example:
      pkunzip mom131 itemmake.exe
      pkzip -d mom131 itemmake.exe
       This will reduce MOM131.ZIP to just below 1.44MB.  Just remember to
      copy ITEMMAKE.EXE onto another diskette.
                                         [ncl@philabs.philips.com (Nai-Chi Lee)]
   F) If you are on a unix account, try "split":

        split -b 1000000 mom131.zip m

      This will create several files, all starting with "m", and having names
      like "maa" "mab", "mac", etc.  The syntax for "split" may vary so check
      your man page.  On some machines use:  "split 3000 mom131.zip m"

      The "maa", "mab" etc. files will be small enough to put on to diskettes.
      When you get all the ma* files copied onto a PC's hard disk, type:

        copy /b maa+mab+mac+(etc.) mom131.zip

      Then:  pkunzip mom131
                                          [Travis@cs.wm.edu (Travis X. Emmitt)]


    -------------------------------------------------------------------------------
    1.4) How can I contact / e-mail MicroProse?   -- section rewritten DS
    -------------------------------------------------------------------------------

    Microprose website:       http://www.microprose.com
    Support website:          http://support.microprose.com

    The MicroProse Game Hint Line (900) 773-HINT U.S. only

    MicroProse USA            Attn: Customer Support
                              2490 Mariner Square Loop
                              Alameda, CA
                              USA 94501
                              (510) 864-4550
                              (510) 864-4602 FAX
                              Email: support@microprose.com

    MicroProse UK, Europe     Attn: Customer Support
                              The Ridge
                              Chipping Sodbury
                              South Gloucestershire
                              England, UK, EU
                              BS37 6BN

                              44-(0)1454-893-900
                              (10:00-12:30 & 13:30-16:00 GMT)
                              44-(0)1454-894-296  FAX
                              (09:00-17:30 GMT)

                              UK BBS (14,400 baud)
                              44-(0)1454-327-083
                              44-(0)1454-327-084
                              Email: UKSupport@Microprose.ltd.UK
```

```
        MicroProse Germany         Microprose Deutschland
                                   Markstrasse1
                                   33602 Bielefeld
                                   Germany, EU

                                   Yon Montags bis Freitags
                                   49-(0)1805 25 25 65
                                   FAX: 49-(0)1805-252-564
                                   (1400-1700 CET)

                                   GERMANY BBS
                                   49-(0)1805 25 25 64
                                   (28,800 baud, 2 Lines)
                                   Email: service@microprose.de

     Feedback about the MicroProse support site: webster@microprose.com


   ------------------------------------------------------------------------------
   1.5) How can I get the MOM strategy guide?
   ------------------------------------------------------------------------------

     An excellent strategy guide is available from Prima Publishing.  It should be
     available where MOM is sold, and some book stores.  Or you can order it from
     Prima directly 800 531-2343 (FAX 800 582-8000), P.O. Box 629000, El Dorado
     Hills, CA 95762.  Cost is $19.95 + $4 shipping/handling, or + $7.50 for rush
     shipping.  It was co-authored by Alan Emrich who reads and posts to
     comp.sys.ibm.pc.games.strategic.  You can e-mail Alan at cgwalan@aol.com.

     Got my copy - 462 pages!  Now I can find out what Magic Immunity does and
     doesn't do.  How combat/shields actually work!  There is a discussion of
     Computer Player psychology (what they do, what their priorities are, how they
     engage in diplomacy, etc.)  Did you know your fame must be at least 40 before
     "Champions" will show up at your door?  Naturally there are dozens of tables
     showing exactly how things work.  The book is surprisingly complete with
     information on every spell, every summoned creature, and every race.  Many of
     the internal mechanics of the game are revealed.  The writing is clear and
     easy to read, and a humorous, entertaining style makes it fun.

     I love this book because when I have questions, I can get answers.  How much
     gold do you get from roads?  Now I know.  Often the knowledge can
     dramatically improve your strategy.  I knew Swordsmen were often surprisingly
     ineffective, but I didn't understand why.  Now I know that the defender's
     shields are re-applied to each figure's attack.

     I heartily recommend this book to all MOM players.  It is top quality.  [BLJ]


   ------------------------------------------------------------------------------
   1.6) Where can I get the latest version of this FAQ?
   ------------------------------------------------------------------------------

     As of this revision the only place to get the latest version will be: [DS]

        http://www.gamefaqs.com/


   ------------------------------------------------------------------------------
   1.7) Anyway to play MOM multi-user?
   ------------------------------------------------------------------------------

     See the 12.3 section below for a new rebuild to make MOM multiplayer.

     Jay Barnett has produced a multi-player shell that allows you to switch
     between two human players (hot-seat).
```

Version 3.0 of the Multiplayer Shell I wrote for MoM may be found at
ftp.uwp.edu in the /pub/msdos/romulus/cheats directory under the name
"mmom30s.exe". I plan to upload future upgrades to this same site. I can be
reached at jay5941353@aol.com.

Version 4.2 can be found at:

   Try this first: http://www.proaxis.com/~jarvinen/magic/mmom42s.zip
        Alternate: ftp://users.aol.com/mmoms/mmom42s.zip [DS]

The Shell provides for hot-seat play between multiple human and computer
opponents, limited to 2 human and 2 computer opponents in the shareware
version, with up to 4 human opponents supported in the registered version.
This is accomplished via modifications of the saved game files--the Shell
alters no Microprose executables or other files, except for the saved files.
It should thus in no way affect normal single-player play.

The Shell features:

  - Mouse-driven interface.
  - Modem or email play is possible, provided you have a means of
    transferring binary files.
  - A special "address the council" sub-turn to allow speaking with all
    wizards, whether you've encountered them or not.
  - A resign function to allow the computer to take over the position of
    human players.
  - Automatically transforms a multiplayer game to a normal, single player
    one when only one human player is left.
  - Import wizards from other games, along with a city and up to nine
    non-heroic units into multiplayer games.
  - A separate saved-game file system for multiplayer games to help keep your
    normal slots free.
  - Automatic backup on each player's turn to protect against lock-ups.

The only known abnormalities are:

Human players' exploration is shown on the same map--units are still only
seen if they are within range.

Diplomatic relations must be conducted through the "address the council"
sub-turn.

Rampaging monsters and raiders move once per human turn--i.e., twice per turn
for two player, thrice for three player, etc. Most users have actually
claimed to like this, as it makes monsters, raiders, sentries, and
garrisoning much more important elements of the game.

The total number of players is limited to 4, with a fifth "ghost wizard" who
serves as a buffer.

The Shell only allows pure hot-seat play--this means if you get attacked when
its not your turn, the computer will control your units for the duration of
the battle. It thus becomes strategically important to be in a position to
attack rather than defend, unless you consider the computer a good tactician.

The Shell requires Masters of Magic v1.2, v1.3, or v.131.

CHANGES FOR v3.0s FROM v2.xx:

  - Speed increase of 65%.
  - No longer necessary to manually exit to DOS between turns--the Shell now
    uses hot-keys from within MoM.
  - 100% compatible with sound (though 45%+ faster if used with effects
    only).

```
        - Requires only 500 bytes of free upper memory over MoM's normal
          requirements.
        - The Shell now requires the presence of an extended keyboard BIOS to
          function properly.
        - Email and modem-to-modem play have been greatly facilitated, but still
          require the use of third-party communications software.
        - Minor bug fixes and additional features.


     Note: Microprose was in no way involved in its production or distribution,
           will not support it or any changes it might make, and is in no way
           liable for any damages it might cause.
                                       [jay5941353@aol.com (Jay5941353 - Jay Barnett)]

     Another possible location:
           ftp.cdrom.com  /pub/dresden/games/cheats/utility


  --------------------------------------------------------------------------------
  1.8) How can I get the MOM saved game editor (EDMOM)?
  --------------------------------------------------------------------------------

     Section moved to 12.1   [DS]


  --------------------------------------------------------------------------------
  1.9) What about MOM 2?    [DS]
  --------------------------------------------------------------------------------

     As of this writing (June 14, 1999) MicroProse has part of the team from Birth
     of the Federation working on a sequel to MOM, but any such game would be a
     very long way off.                                          [CNET Gamecenter]

     It is now July 18, 2000, and I have heard NOTHING else about MoM2.  Does this
     mean that there is no MoM2 in the works?  No, but it isn't really a good
     sign.

     I have also heard (May, 2001) that the performance of Master of Orion III
     might influence whether there will be a MoM2.  So, go out there and buy a
     copy of MoO3 when it comes out.

     As of April, 2009, there had been some rumors in 2007 that StarDock was
     going to acquire the rights to MOM and put out a sequel. That fell through,
     and they began work on a new IP:

       "Most of our game development team is working on a new fantasy strategy
       game with a 2009 release date; public beta next year. It's a turn-based
       game with tactical combat which is also turn-based. One could describe it
       as part Master of Magic, part Populous and part X-Com. We've developed a
       pretty extraordinary graphics engine for it. I wish I could take credit for
       it but the stuff's way beyond my meager capabilities; the engine team we've
       put together over the last couple of years is just amazing"


  --------------------------------------------------------------------------------
  1.10) How can I get MOM to run in WinXP?  [DS]
  --------------------------------------------------------------------------------

     There are some settings you can try, first, followed by some programs you
     can download which may work.  This may not even be JUST a XP problem, but
     could also be caused by modern hardware.

  With Just XP...

     Open the game directory. (My Computer > C: > MPS > Magic... or wherever you
```

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     put it)

     Right-click the MAGIC.EXE and select PROPERTIES

        - under the PROGRAM tab click "advanced" and check the path to the
          autoexec.nt and config.sys (these should be in the system32 folder).
          Make sure to check the TIMER EMULATION box.
        - also under the PROGRAM tab, unselect the CLOSE ON EXIT box
        - under the MEMORY tab uncheck all the boxes and set all options to AUTO
        - under the COMPATIBILITY tab select "Run in mode for: WIN95"
        - under the SCREEN select FULL SCREEN
        - click APPLY, then OK

     That created a little PIF file (MAGIC.PIF) that uses the MSDOS logo. When you
     run the game later, double-click the PIF, not the original EXE.

     Repeat for WIZARDS.EXE

     Open the C:\WINDOWS\SYSTEM32 folder and edit the AUTOEXEC.NT and REM out
     *everything* except (that is, make sure the word REM appears at the beginning
     of all lines except):

     SET BLASTER=A220 I5 D1 P330 T3

     Next open up the CONFIG.NT and check to see if the following is there:

     dos=high, umb
     device=%SystemRoot%\system32\himem.sys
     files=40

     Nothing else should be without a REM.

     Attempt to run the game, and pray.  If that doesn't work, you can try any
     of the following three methods.

   AbandonLoader:

     http://abandonloader.gamport.net/

     Is a program designed to run old games in new Operating Systems.  Download,
     select MOM from the games list, and run.

     Features

        VDMSound automated support (NT/2000/XP only) for emulating old sound cards.
        Picture previews (bitmap sizes are 160x100).
        Over 200 Games currently pre-configured.
        On-the-fly shortcut execution.
        CPU Slow down feature.

     Editor's Note:  I couldn't get this one to run, but other people swear by it.


   DosBox:

     http://dosbox.zophar.net/

     Of all the methods here, this is the only one I could get to work, but it is
     SLOOOWWWWWW...

     Simply download and extract to a new DOSBOX folder.  Run.  Next you'll need
     to mount your actual hard drive... so type this:

        mount c c:\
```

```
    Then type:

      c:  [enter]
      cd mps    [enter]
      cd magic    [enter]
      magic

    Special Keys:
    =============

    ALT-ENTER        Go full screen and back.
    CTRL-F5          Save a screenshot
    CTRL-F7          Decrease frameskip
    CTRL-F8          Increase frameskip
    CTRL-F9          Go full screen and back.
    CTRL-F10         Capture/Release the mouse.
    CTRL-F11         Slowdown emulation.
    CTRL-F12         Speedup emulation.

    Special keys might freeze your game.

  VDMSound

    This one is built into the AbandonLoader above, and should be used if you
    simply get the "insufficient memory" issue.  Once installed, you run the
    game with it by right-clicking the game and selecting to run with VDMSound.

    http://ntvdm.cjb.net/
```

```
===============================================================================
2) Beginner's Guide
===============================================================================

  Here are some tips to help you have more success and less frustration in your
  first few games.

        [Many, including tommi@rama.informatik.rwth-aachen.de (Thomas Stockheim)
         jrk3g@darwin.clas.Virginia.EDU (Jeffrey Robert King), Andrew B Potratz
         <ap2a+@andrew.cmu.edu>, rhondaa@hpdml92.boi.hp.com (Rhonda Wilson),
         BLJ]


-------------------------------------------------------------------------------
2.1) Picking Your Wizard And Race
-------------------------------------------------------------------------------

  For beginners, Life, Chaos or Sorcery are the easiest.  Death and Nature
  are the hardest.  You could choose one of the pre-made wizards: Ariel=Life,
  Tauron=Chaos, Jafar=Sorcery, or Horus=Life and Sorcery.  For a custom wizard,
  you could choose Warlord, 1/2 Chaos and 1/2 Life.  High Men are a good race
  for beginners because they can build all the buildings you need.

  ... and orcs.  [MadKaugh]


  If you choose the Myrran Ability (3 choices) the best race to be are the
  Draconians.  Why?  They can fly!  If you work it right you will never ever
  need to build a navy!  The only way to guarantee that you are alone on Myrror
  (if you are doing a custom wizard) is to use the Sss'ra picture.  This
  doesn't work with the latest patch of the game (v1.31).                  [DS]

  Not a good beginner choice.
                                                              [MadKaugh]
```

```
    -------------------------------------------------------------------------------
    2.2) First Build Granary and Farmer's Market
    -------------------------------------------------------------------------------

      In every city, follow this sequence:  1-Builder's Hall, 2-Granary, 3-Smithy,
      4-Market Place, 5-Farmer's Market.  The Granary and Farmers Market produce
      population growth and food.  Interrupt the sequence to build military units,
      if needed.

      Alternatively... Since I always *immediately* set my tax level to 2.0, and
      leave it there unless I conquer unusually hostile cities, I find it better to
      build a shrine before the market.  It not only gives 1 mana and enables
      shamans, but it increases total income as much as the market would (the extra
      tax payer), for the same cost.  Then I sometimes do a sawmill before a
      market, because it will enable bowmen and increase productivity allowing me
      to complete the later buildings faster.  Now, if I'm just starting, I do the
      market first for the money, but later in the game I have plenty of money and
      want to put up the buildings as fast as possible, so I sometimes go for a
      forester's guild and miner's guild even before a market.  I realize this is
      in the section of advice to beginners, though. [DP]

      As you construct any building that adds to your food count in any way, make
      sure to change some of your farmers to workers.  (unless you have a large
      military and need the extra food) [DS]

      "I build 1-Spearman, 2-Spearman, 3-Builder's Hall, 4-Granary, 5-Shrine,
      6-Smithy, 7-Market Place, 8-Farmer's Market, 9-library, 10-sawmill,
      11-temple, 12-sage's guild, 13-armory, 14-fighter's guild, 15-ranged fighter

      "If the race is rebellious, I throw in a 3rd spearman after granary and build
      the temple early.

      "I will bump up the shipwright track at one or two cities when needed; I
      rarely need to do this.

      "If I am running low on food, I will throw in a foresters guild  and/or a
      stable then an animist's guild.

      "The only buildings I do not bother with are I do not build the shipwrights
      track on inland lakes unless the city type can build the merchant's guild,
      and I usually do not build city walls; I usually find them to be a
      disadvantage."
                                                                    [MadKaugh]


    -------------------------------------------------------------------------------
    2.3) Use a Magic Spirit as a scout
    -------------------------------------------------------------------------------

      At 1 mana the maintenance cost is pretty low, and Magic Spirits can move
      two squares per turn, and over water.  Even better - cast Endurance on it.

      Another thing you might want to do with your MS Scout is use it to explore
      all the ruins/temples/etc., but don't actually fight the monsters inside.
      You just want to find the empty lairs. [DS]

      I always do guardian spirit. They are more expensive, but they can on
      occasion take over the odd lightly defended neutral citty, they can on
      occasion take over the undefended rival node that has a magic spirit, and
      they provide a measure of protection for your nodes when you use them.
                                                                    [MadKaugh]


    -------------------------------------------------------------------------------
```

    2.4) Conquer Lightly Defended Lairs

      In the early game, this will bring in much needed mana and gold. Leave tough
      lairs alone until your army gets stronger. A lightly defended lair consists
      of Phantom Warriors, War Bears, Giant Spiders, Skeletons/Zombies, Magic
      Spirits, etc. Although these could be more difficult, depending on their
      numbers. The HARD lairs are monsters like the Great Drake, Great Wyrm, Sky
      Drake, etc. [DS]

    2.5) Conquer Neutral Cities

      Conquering neutral cities will rapidly grow your empire and tax base.
      You will need a bunch of soldiers and helpful magic. Life: Heroism,
      Lion Heart, Healing. Chaos: Fire Elementals, Eldritch Weapon, Flame Blade.
      Sorcery: Phantom Warriors, Confusion, Counter Magic.

      ...Lionheart? At 200 casting, you could summon some really good stuff, and
      you'd have to have 11 life books to be able to throw this at all, in the
      beginning. In-combat casting cost for lionheart is 40, and you won't have
      that much casting skill for a long time, so that's not a startup option
      strategy. And... counter magic?? You were talking about *neutral* cities,
      right? These aren't neutral cities garrisoned by warlocks are they?   [DP]

      Don't just conquer any neutral city that you come across, however. Make sure
      that it can be easily added to your empire (if it's in the middle of enemy
      territory, you might want to pass it by). Also make sure that the race is
      favorable to your goals. Typically I leave Nomads alone, but raze Klackons
      to the ground. Good races to take are: Human, Barbarian, Orc, High Elf,
      Dwarves, Dark Elves, Draconians, and Trolls. You can, of course, take other
      races and use them just for one particular thing (like the Lizard's Turtle),
      but remember that cities require a lot of support from you! For more
      information on the various races check out section 5.   [DS]

      "I mostly keep these cities: halflings, high elves, humans, orcs, nomads, and
      all the races on Myrror.

      "Because of their reasonably fast growth and ability to produce most (human)
      or all (orc) of the buildings, settling the bulk of your empire with humans
      & orcs provides the best financial base. The nomads and elves grow too slow
      to be the big cash producers, and the dwarves both grow slow and are limited
      in what they build.

      "I generally keep these: barbarians, lizardmen, and gnolls; I may raze some
      if I have too many. It seems from the stats that halflings should be in this
      bucket, but their high food production mitigates, and they produce good
      units. The barbarian cities to keep should be on the coast; one of the best
      things the barbarians do is crank out ship.

      "I generally raze the ants, keeping at most one or two cities, often none.
      I use these to crank out engineers.

      "I also raze cities that are poorly cited and interfere with overall
      development."
                                                                      [MadKaugh]

    2.6) Always Hire heroes

      When heros show up, hire them. There are some exceptions to this. First off,

        only hire what you can afford (if you are making 2 gold a turn, and the hero
        requires 2 a turn, you may want to wait). Second never hire a 6th hero. Once
        you have 5 any you hire in addition will be REPLACING an exisiting hero.
        After all you never know when you'll get a better hero!   [DS]

        Mercenaries may help very early in the game, but often later in the game, it
        is far cheaper to make your own units. The best mercenaries to hire are those
        which you cannot produce on your own. For example if you are Dark Elves and
        you get the option to buy an Engineer you TAKE IT!   [DS]

        Flying units can help explore early in the game. Invisible units can be close
        enough to where they are needed that they are worth hiring even if you have
        dark elves to produce your own. If you have no halfling cities, buy every
        slinger you can lay your hands on.
                                                                        [MadKaugh]

        I hire all heroes, and go use the worthless ones to explore nodes and ruins
        to see what's there. If you kill them off before they make a level, instead
        of disbanding them, you won't lose any fame and they won't bother you later.
        About the only mercenaries I ever hire are engineers and war trolls. The
        other really good units never seem to offer until later in the game when I
        can build them myself with admantium instead of hiring weaker units for the
        same upkeep. Since you can't build war trolls with admantium, I'll take any
        that I can get, from any source. (And I'd LOVE to be able to hire Settler
        mercenaries, but I've never seen any.)   [DP]

        I like hiring the heroes and sending the ones I don't want on suicide
        missions. Sometimes they do well anyway. One of the last games I played I got
        Brax. He normally is filler, but he kept just barely winning encounters. By
        the end of the game he was at demigod status. This has happened at least once
        with even the lamest heros.
                                                                        [MadKaugh]

    2.7) Build Experience

        Experience makes heros and fighting units stronger (spearmen, swordsmen,
        cavalry, bowmen, etc.) Experience comes from winning battles. To build
        experience put units in as many battles as possible (even if they aren't
        needed!), and make sure they don't get killed. Experience is also gained at
        the rate of one point per turn...

        Hire every armsmaster that comes your way.
                                                                        [MadKaugh]

        ...Unless the unit is undead (killed by ghoul or wraith, etc). Strangely,
        undead units DO learn from armsmasters! Is there elite after death? Yes!
        (This can also be a pain, if you ghoul-kill some ultra-elite unit owned by
        a warlord, and accidentally leave it sitting with an armsmaster -- it will
        revert to merely elite, instead of staying ultra-elite.)   [DP]

        New heroes should be part of the attacking force but should be held back from
        melee. It takes a few levels before heroes become effective combat units.
        Be patient, they can eventually become the most powerful and coolest units in
        the game.

    2.8) Harvest Minerals Through Colonization

        Build new outposts near minerals. The outpost will turn into a hamlet
        faster, and will produce more income. Also, use the surveyor (F1 key) to

```
     place your outposts in locations with a high "maximum population".

     Citing your cities advantageously is very important. The computer's placement
     of the starting cities is very poor; often a one spce move would have hugely
     increases a stat. You want to maximize population, building resources, and
     gold production; but look our for what the city is destined to produce, and
     leverage the specials as well. If it will produce troops, special minerals
     are an advantage. I usually cite a couple of cities just to produce troops.
     You will want to cite some cities of shipwrights on the seashore.

     Try not to have much overlap terrain where each city gets 1/2 production. The
     computer does this a lot, and it is a poor strategy; you are paying full
     building costs for less production. I do it if one overlap square means the
     citing for both cities is otherwise optimal, or if the shared square is a
     special they can both get benefit from; mierals or nightshade.
                                                                           [MadKaugh]


     -------------------------------------------------------------------------------
     2.9) Developing Cities (after the Farmer's Market)
     -------------------------------------------------------------------------------

       - When you see a rebel in the city's population bar, make a building that
         reduces unrest: Shrine, Temple, Parthenon, etc.  (you may want to build
         these before you see the Rebel!)

         Multiple spearmen are a good way of augmenting the buildings.
                                                                           [MadKaugh]

       - As early as possible, increase production with Sawmill, Forester's Guild,
         Miner's Guild.  That way, later buildings will be built more quickly.

         Count the tree squares; if you have only one, the sawmill is not going to
         be much of a boost.
                                                                           [MadKaugh]

       - As you can, speed up spell research by building in every city:  Library,
         Sage's Guild, Alchemist's Guild (for mana), University.

         After some research facilities, cut your direct research spending of mana
         back to zero.
                                                                           [MadKaugh]


     -------------------------------------------------------------------------------
     2.10) Build High-End Military Units
     -------------------------------------------------------------------------------

     To win tough battles, build high-end military units and beef them up with
     experience and magic spells.  It is usually better to build one Pikemen or
     Paladin than a horde of Spearmen.  However, don't assume that your 1 Paladin
     can beat an entire horde of Spearmen!  (especially if they have good
     experience)

     I very much disagree. It depends on your bottleneck resource. Early on, I can
     afford spearmen & swordsmen. I have not found halbardiers to be worth the
     expense.
                                                                           [MadKaugh]

     However... Pikemen have so few hits and low enough defense/resistance that
     I've never bothered with them after the few times I tried them.
     Bowmen/shamans/sprites just slaughter them, and you lose your expensive unit.
     When I meet them in battle, I laugh and blow them away.  Barbarian spearmen
     are better, having lower build cost and upkeep and nearly as much attack,
     half of which comes before the enemy gets to attack at all, plus you get
```

eight units instead of just one. Of course, it makes a difference what
you're up against: units with large defense, like wyrms, your spearmen are
useless, and pikemen are better. But for run-of-the-mill stuff, 8 spearmen
are better than 1 pikeman.   [DP]

So, maybe they're not so good?
                                                              [MadKaugh]

You don't need military buildings in every city. Your capital, or your
largest city (if it isn't the capitol) will probably be your main military
production center. Build Barracks, Armory, Fighter's Guild, etc. in the
cities dedicated to military production.

In your military cities set farmers to a minimum. Use other cities for
farming.

Your military cities also need an Alchemist's Guild. This gives newly
created fighting units "magic" weapons with a +1 to-hit bonus. This makes
their weapons 33% more effective!

... unless you take alchemist as a starting option.
                                                              [MadKaugh]

2.11) When you meet a new wizard

  When you meet a new wizard exchange as many spells as you can, and try again
  after you pick up new spells.

  Be careful what you give away. You will come to loath disjunction, dispels,
  psionic attack, and counter magic.
                                                              [MadKaugh]

2.12) Save game before every battle.

  While you are learning, save game before every battle. Whether you win or
  lose, consider reloading and replaying interesting battles. Each time, try
  something different in the way of tactics, spells or even summoned
  creatures. Be imaginative. By fighting the same foes in different ways,
  you get a feel for what tactics and spells are the most effective. If your
  creative new tactic fails, just reload and try again. It's not whether you
  win or lose - as long as learn from it.

  Really -- not to cheat by restoring it, but because the game will PROBABLY
  screw up, crash, cheat against you, or futz up somehow.   [DP]

2.13) Keep a gold reserve when you can.

  Merchants won't offer to sell magic items to a poor wizard. Also,
  mercenaries and heroes check you bank balance before they knock on your door.
  Plus if you ever start running a deficit, you will want some money to fall
  back on. (and if you need to you can always spin it into Mana)   [DS]

  Alchemist starting option lets you convert mana & gold without overhead; so
  you can use one to take up the slack in the other. At the cost of one
  starting point, it makes your game play very flexible.
                                                              [MadKaugh]

```
    -------------------------------------------------------------------------------
    2.14) In the early game, try to maintain peace and explore ruins
    -------------------------------------------------------------------------------

      By exploring ruins and lairs, you will gain wealth, mana, spells, an
      occasional enchanted item, and all important experience for your units and
      heroes.  If your scout reports something really difficult (Death Knights,
      Great Wyrms, Drakes, etc) come back later when you have the right units to
      deal with the attackers.  Nodes are generally harder than ruins but when you
      can conquer them the treasures are greater and (using Magic Spirits) they
      produce mana income every turn.

      Tip:  Save it before you enter any ruin/node/etc.  This isn't just about
            survival (i.e. you may get whupped in there!), but about which treasure
            you get after the battle!  If you get something you didn't want (a bad
            item) then reload and try again!                                   [DS]


    -------------------------------------------------------------------------------
    2.15) How do I save a game?
    -------------------------------------------------------------------------------

      You have to click in a slot, and then type to name the saved game.  Then a
      Save button will appear and you can click on it to save.  After there is a
      name in the slot, just click on the slot to get the Save button.



    -------------------------------------------------------------------------------
    2.16) Spells to Avoid
    -------------------------------------------------------------------------------

      Spells the player should NEVER throw:
          Famine (absolutely no effect)
          Cloak of Fear (works backwards, ENTIRELY against the player)
          Subversion (works backwards, or at best is worthless)
          Suppress Magic (supresses a Spell of Return)
          Spell Ward (ONLY keeps out creatures, has NO other effect)
          Flying Fortress (only hurts the player)

      Spells the player should never throw under these circumstances:
          Word of Recall / Recall Hero on a regenerating unit (no effect)
          Word of Recall / Recall Hero if you need to use the hero soon
                  (it ends up with 0 or even negative figures left)
          Chaos Channel on barbarians (you lose the thrown weapons)
          Doom Mastery while producing new barbarians (lose thrown weapons)
          Metal Fires while all units are chaos channelled (no effect)
          Confusion, Creature Binding, Animate Dead on *all* of the
                  powerful creatures in a battle (you'll get no fame)
          Animate Dead on any dead enemy units (they come back on his side
                  after the battle is over)
          Water Walking on a unit with Wind Walking (it overrides it)
          Path Finding on a unit with Wind Walking (it DOESN'T override it)
          Enchant Item / Create Artifact enchanting any of the following:
                  Cloak of Fear (works backwards, against the player)
                  Doom (cuts attack strength in half)
                  Invisibility (no effect in combat)
                  Wraith Form (only gives you water walking)

      Spells the player should throw only with great caution (crashes the game):
          Magic Vortex (don't throw too many in one battle)
          Call Lightning
          Raise Dead
          Animate Dead                                                         [DP]
```

```
===============================================================================
3) Game Operations
===============================================================================


   This section addresses various mysteries about how MOM operates.


-------------------------------------------------------------------------------
3.1) Keyboard Commands
-------------------------------------------------------------------------------

   From: John "Eljay" Love-Jensen
   http://eljay.homeunix.net/~eljay/mom/index.html

   General User Interface
     [Alt-(non-alpha)] move cursor to next field

   Main
     [C] Continue
     [L] Load Game
     [N] New Game
     [H] Hall of Fame
     [Q] Quit to DOS
     [ESC] Quit to DOS

   Overland
     [Alt-A] (toggle) Automatic Next Turn
     [Alt-N] (toggle) Display X-coord in red, and Land Mass Index in white
     [Alt-K] (toggle) Strategic Combat
     [N] Next Turn
     [M] Magic screen
     [C] Center on active stack
     [A] Armies screen
     [S] Spells screen
     [G] Game screen
     [D] Done select
     [W] Wait select
     [P] Plane toggle
     [B] Build select
     [Q] Deselect stack
     [U] Deselect stack
     [`] White border on clickable areas (mouse clicks passed to the click-
         handler for that area)
     [~] Yellow border on right-clickable pop-up help
     [Ctrl-N] Surveyor
     [Ctrl-O] Cartographer
     [Ctrl-P] Apprentice
     [Ctrl-P] Apprentice
     [Ctrl-Q] Historian
     [Ctrl-R] Astrologer
     [Ctrl-T] Tax Collector
     [Ctrl-U] Grand Vizier
     [Ctrl-V] Mirror
     [F1] Surveyor
     [F2] Cartographer
     [F3] Apprentice
     [F4] Historian
     [F5] Astrologer
     [F6] Chancellor
     [F7] Tax Collector
     [F8] Grand Vizier
     [F9] Mirror
     [F10] Save Game in the "Continue" slot
```

```
    [F11] Quit to DOS, with memory usage diagnostic
    [Ctrl-L] simulates a left-mouse click

  Overland: Unit Selected
    [#7] [#8] [#9]  NW  N  NE
    [#4]      [#6]  W      E
    [#1] [#2] [#2]  SW  S  SE
    [Ctrl-A] W
    [Ctrl-B] E
    [Ctrl-C] N
    [Ctrl-D] S
    [Left] W
    [Right] E
    [Up] N
    [Down] S
    [Ctrl-Y] NE
    [Ctrl-Z] NW
    [Ctrl-]] SE
    [Ctrl-\] SW

  Magic
    [Alt-RVL] fully explore Arcanus and Myrror for all wizards
    [Alt-PWR] instantly have all spells, 10000 MP, 100 casting skill for all
              wizards


--------------------------------------------------------------------------------
3.2) What is the difference between the Floppy and CD-ROM versions of MOM?
--------------------------------------------------------------------------------

  No difference in the game play.  The CD-ROM version saves disk space.   [BLJ]


--------------------------------------------------------------------------------
3.3) The CD version is slow - how do I get it onto my hard disk?
--------------------------------------------------------------------------------

  The 1.3.1 README.TXT has directions on how to do this.              [BLJ]


--------------------------------------------------------------------------------
3.4) Why are my ships suddenly moving at only half speed?
--------------------------------------------------------------------------------

  Somebody cast Wind Mastery.  Look in the Magic screen.
                                  [bdb0004@jove.acs.unt.edu (Barry D Bloom)]


--------------------------------------------------------------------------------
3.5) Why can my Trireme sometimes carry only 2 units, sometimes 4 or more?
--------------------------------------------------------------------------------

  What is confusing you is that heros don't contribute to the total.  Also,
  any Fliers, Water-walkers, or non-corporeals in the stack do not contribute
  to the total.  Aside from that, the carrying limit is:
```

	Carries	Moves	Costs	Melee	Range	Shields	Hearts
Trireme	2	2	60	4	-	4	10
Galley	5	3	100	6	3 (x8)	4	20
Warship	3	4	160	8	10 (x99)	5	30
Air Ships	0	4	200	5	8 (x10)	5	20
F. Islands	8	2	50 m	-	-	0	45

```
  The carries column indicates the correct number.  However, there seems to
  be a bug that sometimes lets you exceed the load limit, especially if the
```

    ship is a Galley and it also contains heros.

    Heroes do not count against the unit total on ships. A trireme can carry two
    normal units and three or four heros.
                                                                        [MadKaugh]

    3.6) What do the two numbers in spell skill mean?

    If your spell skill is listed as 42(32), the number inside () is your actual
    spell skill, while the number outside is your effective spell skill,
    augmented by 1/2 of the spell skill of any spell casting heros currently
    residing in your Fortress city.

    Heroes only contribute casting skill if the spell you are casting takes more
    than one turn. eg: if you have 105(60), then you can cast only one Change
    Terrain (50) spell a turn, but Summon Hero (300) will only take 3 turns,
    not 5.   [v119matc@ubvms.cc.buffalo.edu, BLJ]

    Wrong. If you spell out so no spells are "instantaneous" then start a change
    terrain, the 45 points you get from the heroes goes toward that spell, and
    should leave you with 60-5+x available immediately at the beginning of the
    next turn, which you can use on a change terrain, making two of them per
    turn. I use this method all the time casting the more expensive city
    enchantments at the end of a game. Heroes give me 280, the spell costs 300,
    I start it at the end of the turn and it's done, leaving me with just 20
    points less than my skill to use on the next turn. Now, if you have 49
    points left and cast change terrain, you're wasting all but 1 point of the 45
    they could have given you, and you only get one change terrain spell per
    turn. But that would be dumb.   [DP]

    3.7) How does the Spell Skill Bar on the Magic screen work?

    The three bars show how your powerbase mana is allocated. The first bar is
    how much goes to mana reserve (storage), for spell casting later. The second
    bar is how much goes to spell research. The total shown under the second
    bar includes the mana you put in plus Libraries, Sage's Guilds, etc. You can
    put in 0 from your power base and still get research done, if you have
    Libraries, etc.

    The third bar improves your spell skill. Mana from the third bar goes into a
    pool, and when the pool gets to 2 times your current skill, your skill goes
    up a point. Note: If the pool totals more than 2x, the excess is not wasted,
    but carries over for the next increase. If your current skill is 30, you
    will have to build up a pool of 60, to bump your skill up to 31.

    Archmage gives you a starting 10 pt spell skill bonus, and a 50% bonus to the
    mana added to your improvement pool. For example, if your powerbase is 60
    and each bar is getting exactly 1/3, you are putting in 20 mana, but the
    number added to your pool and shown under the bar will be 30. Also, the
    starting 10 bonus points are in addition to the normal "pool" process. In
    other words, if you are an archmage and your skill is shown as 30, that is
    the 10 bonus points and 20 normal points. When the pool gets up to 40, your
    normal points will bump to 21 and your spell skill will be 31.
                                                    [danhite@aol.com (Dan Hite), BLJ]

    Tip: When you are finished with Research (you have all the spells you'll
          ever get), then be sure to drop the Research bar down to 0.
          Surprisingly this often gets you a few extra points in the other 2
          bars.   [DS]

3.8) I Have Spell X, Why Can't I Create An Artifact With Enchantment X?

  In the Manual, Table M (p. 146) shows what you need for specific item
  enchantments. It is controlled by how many books you have in a color, not
  which spells you have researched. If you have 7 Sorcery books, you can
  create an artifact with Haste even before you know the Haste spell. Haste is
  the highest requirement, a lot of enchantments only require 2 or 3 books in a
  color. On the other hand, to put spell charges in a Staff or Wand all you
  need is to know the spell.   [Brian Wade (FLEBO@AOL.COM)]

3.9) How to get Summon Champion?

  It is an arcane spell so you should always be able to research it, but it may
  be late in the game. You will get it sooner if you have fewer spells to
  research (fewer books, more retorts). Also, if you take Artificer you have
  2 fewer spells to research. You may be able to trade for Summon Champion
  with other wizards.   [yl1@cs.buffalo.edu (Yong Xiang Li)]

  If you do a no magic book set of starting magic picks, you will get summon
  champion early on. However, with no spell books, you will have a limited
  group of champions to draw on. Warrax requires at least one Chaos magic
  book. Roland requires Life. Rayashack, Death magic. Alorra, Nature. [BLJ]

  That may seem to "make sense", but it is NOT true. I've seen the Chaos
  Warrior show up many many times when I had no chaos books. Just looking
  at the other wizards in the saved games I have available proves it isn't
  true. In my experience, the only heroes who care which books you have are
  priestess/necromancer, and paladin/black knight. (And, of course, Torin.)
  You never get the Life heroes unless you have Life books, and same for the
  Death heroes. But the other champions can join you or answer a summons no
  matter what your books are, proven fact. Indeed, the Elven Archer casts
  two sorcery spells, so why would anyone associate her with nature?   [DP]

3.10) What can I do with a Death Settler? (Settler killed by a life stealer.)

  Nothing. (There was a small hoax on the net describing a way to get the
  death settler to build a death city that would produce skeletons, zombies,
  etc. as troops.)

  PS. To: [tommi@kaa.informatik.rwth-aachen.de (Thomas Stockheim)] for starting
  the hoax, I salute you!   [BLJ]

3.11) How does the road "Trade Route" gold bonus work?

  You get gold bonuses for rivers, ocean shore, and roads. The Surveyor (F1)
  shows you shore and river bonuses. To calculate the road bonus. Suppose
  City A and City B are connected. If City B has a population of 20, multiply
  by 1% if A and B are different races, or .5% if same race. Lets suppose they
  are the same race, so we get: 20 * .5 = 10%. This bonus applies to the
  Base Gold Income, which is the total of taxes, and gem, gold and silver
  mines. So if taxes and mines add up to 20, the road bonus would give you
  20 * 10% = 2 GP.

    The river, shore and road bonuses are limited to a maximum. The maximum
    is 3% times city population. Suppose in the example above, City A
    also had 20% worth of shore and/or river bonuses. In that case, the total
    bonus would be 30%, but city A would only get the full benefit if City A
    has at least 10 population.

    Note: You get the shore bonus when shore squares are included in city limits
          but you only get the river bonus when the city is built directly on the
          river.
                        [BLJ, p. 122 of the MOM Manual, MOM Official Strategy Guide]

==
4) Strategic Info
==

    This section contains an assortment of strategy tips and suggestions.

4.1) Why aren't my bowmen, galleys, slingers doing any damage?

    Your missile firing troops (bowmen, slingers, galleys) have a to-hit penalty
    at longer distances. If you are not doing damage, you need to get closer to
    your target. The distance penalty is -1 for 3-5 squares of distance, and -2
    for more than 5. (If a units has "Long Distance" (Longbowmen, Catapults)
    the penalty is -1 for 3 or more squares distance.)

    Note: Heroes (and others with 2 movement) can move 1 unit toward an opponent
            and then fire.
                            [BLJ, jrk3g@darwin.clas.Virginia.EDU (Jeffrey Robert King)]

            Units can move until they have .5 points left, and then fire, no
            matter how far they moved. A hero can use this to avoid drakes while
            cutting them to pieces in the same turn.   [DP]

    You can use this to your advantage by moving AWAY from an enemy firing at
    you, to maximum range, and waiting until the idiot has finished wasting all
    his arrows, then moving in for the kill. I used this once against 8 steam
    cannons, which blew away the previous "Pickett's Charge" tactic I tried.
    Second attempt, I didn't lose anything, because at long range, their few
    hits were almost always blocked by my defense.   [DP]

4.2) Jump the Ocean with Guardian Spirits

    A few guardian spirits can often go across the ocean and take a weakly
    defended neutral city on another continent, allowing you to spread your
    empire across twice the area you would otherwise have, without worrying about
    ships or flight spells. Even better are nagas or sprites if you can get
    them.

                                            [cbyler9312@aol.com (CByler9312)]

4.3) Why do Phantom Beasts do so much damage?

    They have illusionary attack that ignores defense (shields). In other words,
    they attack as if your shields are 0. Solution: Phantom beasts and other
    illusionary attacks will only have normal attack results against units

       enchanted with True Sight, or anything with Immunity to Illusions.   [BLJ]

    Or you could just kill them with a ranged attack before they ever get near
    you. The Dark Elves very rarely have anything to fear from Phantom Beasts!
                                                                          [DS]

    4.4) How To Get More Heroes

    As the game progresses make sure you keep some gold in reserve. A hero that
    will require 300 GP to be hired, won't show up unless you have 300 GP. You
    will attract better heros if you increase your fame, by conquering cities
    and beating groups of 4 or more. Use F9 to see what your fame is.   [many]

    Excess gold can be stolen. Spend it while you got it. I try to keep 1000 gp
    reserve until I have the heros I want; the best ones cost that much.
                                                                       [MadKaugh]

    Just because a hero comes along, doesn't mean that you should hire the bum.
    Take a close look at what they can do, and decide whether you need that hero,
    or if you might get a better one later. Also if you have enough Life Books,
    you WILL want to cast Incarnation to get Torin the Chosen.   [DS]

    You want to be selective about who you keep, but you increase your odds of
    finding someone good in a node if you hire the bums and kill them off, rather
    than just sending them off.
                                                                       [MadKaugh]

    4.5) How Does Multi-Figure vs Shields Combat Work?

    Frequent question on the net: My Swordsmen unit, 6 figures, 4 swords. Is it
    a 24 sword attack or six separate 4 sword hits? The answer is the second.

    This makes a big difference, depending on the number of shields the opponent
    has. For example, a new Stag Beetle has 1 figure, a 15 attack and a 7
    defense, while new Swordsmen have six figures with a 3 attack and a 2
    defense.

    In a fight, each Swordsman has a .3 * 3 = .9 chance of scoring a hit.
    However, on average, the Stag Beetle's 7 shields will block 7 * .3 = 2.1 hits
    of damage. That means that the Swordsmen will only injure the Stag Beetle
    when by luck the Stag Beetle's shield roll below average. Each attack the
    Swordsmen do make 6 attacks, improving the odds somewhat.

    The Stag Beetle will, on average, score 15 * .3 = 4.5 hits, with Swordsmen
    shields stopping only 2 * .3 = .6 hits of damage. The Beetle will tend to do
    4.5 - .6 = 3.9 hits of damage each round.

    This gives you a reason to play races with higher shields, such as Trolls,
    Klackons, and Lizardmen. If you just look at figures*swords, Catapults look
    pathetic compared to swordsmen. But against high shield opponents, they
    are valuable. The same with high hit, low figure summoned creatures.
                                        [jfardal@infinity.ccsi.com (John Fardal), BLJ]

    I think the second part is wrong -- the stag beetle will be blocked by the
    first swordsman's defense until it does one hit to kill it, then will have to
    overcome the defense of the second swordsman, and so on -- so it will
    actually do
            4.5 - .6 = 1 (killed it) + 2.9,
            2.9 - .6 = 1 (killed it) + 1.3,

```
             1.3 - .6 = .7 (might or might not kill it),
   thus killing 2 maybe 3 swordsmen on average, instead of 3 probably 4.
   I guess I'll have to run experiments on this, also.  [Later: verified my
   original theory on this one, anyway.  EACH figure gets its own defense
   against an attack that killed the previous figure.]               [DP]


   --------------------------------------------------------------------------------
   4.6) Why does my Strength 7 hero get butchered by Strength 4 Swordsmen?
   --------------------------------------------------------------------------------

   The answer is that there is strength in numbers.  Let's say we have High Men
   Veteran Swordsmen with 6 figures, 4 swords, 3 defense, and 1 heart per
   figure, versus a brand new Spyder The Rogue with 7 swords, 5 shields and 8
   hearts.  Neither unit has any "to-hit" bonuses.

   First round: Each sword represents a 30% chance of landing damage, for each
   figure in the unit.  Each swordsmen figures will average 4 * .3 = 1.2 raw
   hits.  But Spyder has 5 shields, representing five 30% chances to stop a hit
   of damage, averaging 1.5 stops per attack.  Basically, the Swordsmen have to
   get lucky and roll a little better than Spyder to slip a hit past his
   shields.  The table in section 10.16 indicates that a 4 sword figure will, on
   average, manage to slip .4 hits past a 5 shield defender.  Given 6 figures,
   we could predict 6 * .4 = 2.4 hits of damage.  Lets round to 3, and say
   Spyder takes 3 hits of damage, leaving 5 hearts.  Spyder's 7 swords against
   the Swordsmen's 3 shields can expect to get in 1.3 hits of damage.  Lets say
   Spyder gets 1 hit and that will take out the first swordsmen figure.

   Second round: Five swordsmen figures: 5 * .4 = 2 hits.  Spyder is down to
   3 hearts.  He does the same attack as last round, doing another hit of
   damage, taking out a second swordsmen figure.

   Third round: Four swordsmen figures: 4 * .4 = 1.6 hits.  1.6 is closer to 2,
   so let's take away 2 hearts, leaving Spyder just one.  Let's say Spyder gets
   a little lucky this time and round up the expected 1.3 hits to 2 hits.  The
   first hit takes out a third swordsmen figure.  The second hit goes on to
   figure number 4, but figure 4 gets to roll his shields.  Each of 3 shields
   gives a 30% chance of stopping the hit.  Let's say one of them does, and
   figure 4 survives.

   Fourth round: Three remaining swordsmen figures: 3 * .4 = 1.2 hits.  Spyder
   only had 1 hit left, and dies.  But first he gets to swing at the swordsmen,
   killing 1 figure.

   The Swordsmen have 2 of 6 figures left, and Spyder is dead.  Basically,
   each Swordsmen figure had an uphill battle with 3 less swords and 2 less
   shields, but the swordsmen unit had 6 figures to attack with.  Also, it is
   hard for Spyder to kill more than one figure per round because shields get
   reapplied when extra hits are passed along to the next figure.

   However, this analysis is a little biased against Spyder.  At a couple of
   points we rounded the Swordsmen's hits up.  If we had rounded down, Spyder
   could have been victorious.  Also, we gave the Swordsmen 60 experience
   (Veteran level), but Spyder none.  Once Spyder gets 20 experience he will
   get an additional sword, shield and heart, making him much tougher.

   Finally, don't forget random chance.  In the first round, the swordsmen get
   6*4 rolls against Spyder.  If the swordsmen's rolls are high and Spyder's
   shield rolls are low, he can get killed right there.  Another time Spyder
   could roll high and the swordsmen roll low, with no damage to Spyder at all.
   [BLJ]


   --------------------------------------------------------------------------------
   4.7) If a simple unit of swordsmen can beat a hero, what good is a hero?
```

   Here are some reasons why heros are often more useful than regular fighting
   units:

           - heroes can use magic artifacts that add to "swords", "shields",
             movement, and can give special abilities. Most importantly,
             artifacts can give additional "to hit" bonuses.
           - heroes ultimately get more benefit from experience because regular
             units only get 3 experience promotions, but heros can get 8
             experience promotions. Elite regular units get a +2 strength
             improvement, but fully promoted heros get a +8 strength improvement.
             "To hit" bonuses are the most important. Unless you have Warlord
             and/or the Crusade spell, a regular unit can only get +1 to hit.
             But at the top two levels a hero has +2/+3 to hit. This means each
             "sword" has a 60% chance of doing damage. It is true that your hero
             may not be too useful until he/she gets some significant experience.
           - heroes can have powerful/useful special abilities such as Leadership,
             Might, Prayermaster, Legendary, Spell Caster, etc.
           - Defender shields are applied per attacking figure, so a beefed-up
             hero hitting with 24 will do more damage than a 6 figure unit
             hitting at 4*6=24.
           - heroes have cool names and pictures.
                                                [BLJ, MOM Official Strategy Guide]

4.8) Instant Champion Level Units

   If you cast heroism on a unit when you have the crusade spell active, it
   immediately becomes ultra-elite. If you are a warlord, it becomes Champion
   level. Can you say butt kicking time? This also applies to altar of battle
   + crusade + warlord = ALL your units start out Champion level. Fun!!
                            [jrk3g@darwin.clas.Virginia.EDU (Jeffrey Robert King)]

4.9) 8 Units Better Than 9

   I like to organize my units into 8-unit squads mostly consisting of home-
   grown troops rather than summoned creatures. Why 8 and not 9? Sometimes,
   when you take out a tower, you can get prisoners. When I have a squad
   of 9, I never get prisoners.   [mlee@thetis.royalroads.ca (Malcolm Lee)]

4.10) Phantom Warriors: The (almost) worthless unit tactic

   In my latest game I have been playing a sorcerer/life combo. One of the early
   (and cheap - 10 mana) spells you get is Phantom Warriors. These guys do NOT
   hold up very well against better units. However, I find myself using them a
   lot (even though I have much better things I can summon now). Why?

   Because, the enemy AI will often target them instead of your better
   units for destruction! With the missile attacks, etc. going at these
   hapless creatures, it lets your better units close and get the job done
   with minimal casualties first.

   Just because a summoned unit is no good does not mean that it is worthless!
                                                            [David Chaloux, DC]

   Man, I use phantom warriors extremely often -- it's my #1 choice for a

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   sorcery spell when I can only take one.  Have 50 spell skill?  Every lone
   spearman unit comes complete with his backup of 30 phantoms (5 units) to
   hold off that wandering war bear!                                    [DP]

   And, you DO know about the phantom warrior / word of recall bug, right?
   If the summoned creature is recalled, and the battle ends in a draw, it
   stays around after the battle, at your summoning circle!  NO overland
   casting cost, and a flying caster hero can hit the war bear's cave and
   come away with skill/30 phantoms (or skill/55 beasts later in the game)
   without interrupting the master's spell.  So what if they don't "hold up"?
   They're almost free!                                                 [DP]

   And yea, summoning a phantom warrior gives the enemy wizard something to
   blast with a psionic blast / lt bolt, that might have killed your hero,
   until he's out of spells.  (But it's a waste of time to give targets to
   shamans/archers; the phantoms are only good for one shot from those).   [DP]


   --------------------------------------------------------------------------------
   4.11) Why can "Invulnerable" units get killed?
   --------------------------------------------------------------------------------

   Invulnerability gives two benefits.  First is Weapon Immunity, which simply
   increases shields to 10 for normal weapons.  The second benefit is the
   negation of the first 2 hits of damage that make it past the unit's shields.
   For example, suppose a 30 strength Fire Bolt hits an Invulnerable unit, and
   does the statistically predicted 30 * .3 = 9 hits of damage.  Say the unit
   happens to have 9 shields, and they do a little better than average, this
   time stopping 4 hits of damage.  5 hits remain, but Invulnerability negates
   the first 2.  The remaining 3 hits of damage take out 3 hearts.
                                      [schafer@walleye.network.com (Martin Schafer)]


   --------------------------------------------------------------------------------
   4.12) Missile, Magic and Weapon Immunity Can Be Penetrated.
   --------------------------------------------------------------------------------

   Magic Immunity offers complete protection against magic spells except for
   Doom Bolt, Web, Warp Wood and Cracks Call, Black Prayer, Dispel, and
   Disenchant.  It provides a 50 shield defense against magic ranged attack.
   That will typically stop 50 * .3 = 15 hits of damage, but very powerful heros
   with lots of to-hit bonuses can punch through that much defense.  Also, Magic
   Immunity does not help against Doom/Chaos artifacts or Doom Gaze.  It is a
   subtle point, but Magic Immunity also doesn't work against invisibility.
   Not checked, but suspect Magic Immunity does not work against: Blur, Warp
   Reality, Mind Storm, light/darkness spells and possibly Disintegrate.

   Doom bolt does NOT work against magic immune units -- paladins laugh at
   warlocks!   (And warlocks laugh at pegasi, pegasi laugh at paladins; rock,
   scissors, paper, anyone? *grin*).  As for warp wood, I highly doubt it
   works against magic immune units, but I can't remember offhand ever seeing
   a bow-shooting unit immune to magic.  *Every* area effect spell affects all
   units, whether they're magic immune or not, and this includes blur, warp
   reality, black prayer, entangle.  It does not include spells that affect
   units individually, like wrack or call lightning (both of which have serious
   bugs, by the way), or terror.                                        [DP]

   I remember being amazed the first time I accidentally fired at a sky drake
   and DID DAMAGE!  I thought it was impossible, but I finished the battle
   blowing away all of them without working up a sweat.  I wonder, does armor
   piercing make that only a 25 defense?  It was a chaos warrior who did it.
   And apparently, Eldritch Weapon is very useful in cutting through the
   protection, effectively reducing it to a 34-point defense. Note that
   Eldritch Weapon IS effective against magic-immune creatures, so your hero
   can hit Sky Drakes MUCH easier.  (Also very nice vs. Guardian Wind, when
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       your huntress has Eldritch Weapon.)   [DP]

    Missile Immunity protects from arrows, slings and javelins, but not rocks
    (Giants, Catapults, Steam Cannon, War Ships and Air Ships). The protection
    is also 50 shields, but very powerful heros and Champion slingers with many
    to-hit bonuses can punch through.

    It's a hoot shooting skeletons with a Huntress. :) And again, Eldritch
    Weapon is more useful than one more + to hit, because it reduces it to a
    shield effectively blocking 10 damage instead of 15. Even with the claimed
    "champion slingers with many to-hit bonuses" I've never been able to punch
    through Guardian Wind without Eldritch Weapon's help. (And note: Guardian
    Wind on a LUCKY unit (halfling or hero), or when Prayer is in effect, blocks
    20 hits on average!)   [DP]

    Weapon Immunity is pretty wimpy. It doesn't apply to attacks from fantastic
    creatures or magic (alchemy), holy or flaming weapons. Even against "normal"
    weapons it only offers 10 shields of protection. If a unit has 10 shields
    already, weapon immunity adds nothing.
                    [BLJ, MOM Official Strategy Guide, danhite@aol.com (Dan Hite)]

    4.13) Web - maligned, but useful

    The Web spell may be almost worthless while attacking a city, but it is quite
    useful for attacking monster lairs. Especially with ranged attacks. Your
    archers/mages hit them, they can't hit back. And early on, it helps you take
    nature nodes with sprites in them; the web lets my foot units hit the sprites
    without waiting for the sprites to finish their magic attacks off. Even
    after the web is gone, a flying unit is grounded for the rest of the battle.
    Web can also be useful in delaying, say, a behemoth (move 2) for a turn; it
    is a low cost spell for caster heros (like the Beastmaster) to cast, while
    you cast something more powerful.   [Aaron P Teske <at2u+@andrew.cmu.edu>]

    Worthless!?? Web is my #1 choice for nature spells when I only get one.
    Talk about a save-your-ass spell! It's useful in SO many situations I can't
    think where to start. How about: maurauding demon, your city has walls,
    your garrison of a long draconian spearman laughs at the webbed demon who
    can't come in, instead of dying to it, and you win the battle for 10 mana.
    Five gorgons vs your three spell-casting heroes. Web them, blow away the
    one that gets free each turn, never take any damage. Enemy hero attacks,
    never gets a chance to cast his counter magic spell. Enemy defending with
    a pegasus, all you have is a paladin, you win the battle for 10 mana. Two
    arch angels in the temple, you have hammerhands and slingers. Instead of
    losing your slingers, you kick ass for 20 mana. Etc etc etc etc... Man,
    when I play without nature magic, I could just DIE for a web spell! Doom
    Drakes wanting to eat your sage for lunch have to go through your war trolls
    guarding the gate first... steam cannons in the enemy city get one shot
    and fall silent... the great wyrm never gets to hit the two spell casters
    standing there chipping away at it with their 10-point missile attacks...
    geez, and he said "almost worthless"!??? Web is more WORTHWHILE than half
    of the rare spells and some of the very rare spells!   [DP]

    4.14) How can I cast spells in a node?

    Nature spells don't fizzle in nature nodes, and sorcery and chaos spells
    don't fizzle in nodes of their type. Node fizzle is like a 50 mana dispel,
    so a 5 mana Fire Bolt has a 5 / (5 + 50) = 9% chance of success, while a 50
    mana Air Elemental has a 50 / (50 + 50) = 50% chance of success.

                                            [BLJ, MOM Official Strategy Guide]

   ... or take node mastery.
                                            [MadKaugh]

   4.15) Disenchant Area Removes Guardian Spirit Protection

   (From someone's news post:) Casting Disenchant Area on a node can wipe its
   Guardian Spirit meld defense.   [danhite@aol.com (Dan Hite)]

   Does NOT! It tells you there is nothing there to dispel, and won't let
   you cast the spell. Now, *maybe* if there's a unit sitting there with some
   unit enchantment on it, and it lets you cast the spell, it *might* dispel
   the guardian, but I seriously doubt it. I suspect someone wasn't paying
   attention when one wizard's magic spirit took over a node from another
   wizard's guardian spirit.   [DP]

   I've had MY guardian spirit protection dispelled by the computer, but I've
   tried to do the same and it didn't work. It is probably a bug that only lets
   it work one way.
                                            [MadKaugh]

   4.16) Great Combo: Berserked Phantom Beast

   For combat summoning, nothing can beat the death/sorcery combo of a BERSERKed
   Phantom Beast.   [umblazew@news.cc.umanitoba.ca (Dennis Andrew Blazewicz)]

   On the other hand, Berserk costs 30, and Phantom Beasts cost 35. If you have
   enough Death books to get a good discount, this combination may be good.
   Otherwise, you may be better off with 2 Phantom Beasts, especially if you
   get a discount on Sorcery.   [BLJ]

   4.17) Great Combo: Berserk and strong First Strike

   The Berserk spell is a good combination with strong first strike units such
   as Death Knights or Paladins. Your attack strength doubles, making it
   possible to kill almost anything with first strike. When you kill on the
   first strike, the 0 defense doesn't matter.
                                    [wagnere@Informatik.TU-Muenchen.DE (Erwin Wagner)]

   4.18) Great Combo: Berserk and Regeneration

   Another great combo - Berserk + Regeneration. Your suicidal unit dies, but
   as long as you win, it comes back!   [Brian Wade (FLEBO@AOL.COM)]

   Also, invulnerability, luck, prayer, high prayer or blur will make your
   killer berserk units last longer.   [danhite@aol.com (Dan Hite)]

   Not! Invulnerability, yea. Blur, barely. Prayer, high prayer, luck:
   absolutely useless! If the defense is 0, there's not much difference
   between blocking .4 x 0 and blocking .3 x 0, right? And gee, it's sorta
   hard to cast berserk AND prayer, isn't it, seeing as how one is Death and
   the other is Life?   [DP]

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   ------------------------------------------------------------------------------
   4.19) Great Combo: Invisibility + Confusion
   ------------------------------------------------------------------------------

     Because of his special invisibility ability, ShinBo is my favorite hero...
     I send him into ruins, temples etc., then all I do is cast confusion on one
     of the monsters, then press "done done done..." until the monsters (always
     basilisks, earth elementals and various others) are all dead in a "repeated"
     operation.  I found that that is a great way to get good treasures.

     Of course, with 5 sorcery/2 and 2 of any thing else and runemaster
     + artificer... I can create any good artifact I want fast enough, but that 's
     another story.                          [blood@jolt.mpx.com.au (Edward Chan)]


   ------------------------------------------------------------------------------
   4.20) Great Combo: Flier and Call Lightning
   ------------------------------------------------------------------------------

     If the node has no flying units, missile units or web-casters, just tough
     ground units such as Great Wyrms, send in a single flying unit and cast Call
     Lightning.  This will work against most neutral cities too.  Instead of Call
     Lighting, Wrack might also work, but not against death or high resistance
     creatures.

     Magic vortex also works GREAT on ruins, or on klackon cities that are
     worthless anyway, but bad for taking any cities you want to keep.     [DP]

     What if you haven't discovered Call Lightning, but you really want to take
     over those nature nodes on Myrror?  Send in a Draconian spearmen, and cast
     Cracks Call to take out those pesky Great Wyrms one at a time.  Use save/load
     cheat if you are really *really* desperate.
                                           [ncl@philabs.philips.com (Nai-Chi Lee)]

     Yup, though I consider it a half-bug that *merging* monsters are affected
     by Cracks Call (not to mention Earthquake, overland).  I mean, get real!
     Other things you can do to Wyrms are black prayer / black sleep, mind storm
     / black sleep, mind storm / confusion, or mind storm / petrify.  Cracks call
     works best, even though it shouldn't work at all.  And if you can animate
     dead and can kill one wyrm, use it to kill more, and animate them (invisble
     or flying heroes help here) to kill the rest.                        [DP]


   ------------------------------------------------------------------------------
   4.20.1) Similar Power Combos
   ------------------------------------------------------------------------------

     Or invisibiltiy and call lightning, or flight/wrack, or invis/wrack (as in
     the night stalker/wrack combo).  Once you have the casting skill to throw
     black prayer and wrack in the same battle, you can take out most ruins and
     almost every city that way.  Even halfling shamans and slingers can die to
     that, if they aren't too high level yet.  Trouble is, it doesn't leave you
     with undead garrisons like ghouls and wraiths do, so you have trouble with
     unrest.  The advantage of using wrack instead of call lightning is, it's one
     spell class easier to get, being rare instead of very rare.  And Wrack's bug
     works in your favor instead of against you like Call Lightning's bug.   [DP]


   ------------------------------------------------------------------------------
   4.21) Which units are affected by Warp Wood?  (Which are not?)
   ------------------------------------------------------------------------------

     Effects: Bowmen, Longbowmen, Horsebowmen, Javeliners, Slingers, Rangers,
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          Centaurs, Pegasi, heroes with bows, Galleys. Does not effect: Rocks, as in
       Catapults, Steam cannon, War Ships, Airship and Giants that throw stones.
                                                                      [BLJ]

   4.22) Cracks Call killed my hero. How do I defend against it?

       Cracks Call is quite difficult to defend against. Here are some ideas
       that might help:

             - Note: Magic Immunity doesn't help.
             - Flight: Spell or artifact. However, you are still vulnerable to the
               combination of Web and Cracks Call. Any wizard that has Cracks Call
               is likely to have Web. Also, enchanted flight can be dispelled.
             - Invisibility: If they can't see you, they can't Crack you. Again,
               if enchanted, vulnerable to combination of Dispel and Cracks Call.

               Although... If they can't see you, they can't "dispel" you. They have
               to use the more expensive (research and casting) "disenchant" instead.
               Biggest trouble with invis as a defense against cracks call is the
               ghoul-summoning wizard who also happens to know cracks call.   [DP]

             - Counter Magic: Reduces further the chances of a successful Cracks
               Call, but it still is possible. Given a 50 power Counter Magic,
               chances of success per cast are: .25 * 20/70 = 7% chance of success.
             - Wraithform protects you from Web and Cracks call. There are 8
               artifacts which grant Wraithform, so you might be lucky enough to
               get one of those. Wraithform is a rare Death spell, so you probably
               won't have it unless you have a lot of Death spell books.
             - Check how much mana the wizard has. If it is not too large, take
               a stack of spearmen and attack one by one, until the wizard has used
               up his mana. He can't get more until it's his turn, so you are
               safe from Cracks Call, and other combat spells. Strategic combat
               is even better for this because it uses up the wizard's full spell
               skill every time. Of course, it will do the same to you, so only do
               it if you have mana to spare, or you have alchemy and can turn your
               mana into gold first.
             - Power Drain. It's the best damn "counter magic" "anti-cracks call"
               "anti-lightning bolt" "anti-psionic blast" "anti-doom bolt" spell you
               could ask for! Throw it right before attacking, leave him with 0 mana
               left, and the enemy wizard's casting skill or spell knowledge is
               utterly irrelevant! Sure, it doesn't work very well in mid-game when
               the enemy wizard has 20 cities and more mana piled up than you can get
               rid of, and you still have to watch out for heroes, but early and late
               in the game, it's awesome.   [DP]
             - Stack of invisible units. The computer players usually don't have
               a very high mana balance. You can use the Magic screen + right click
               on their picture. If the balance is fairly low, send in invisible
               units one by one. Each round the computer player will cast spells,
               you just hit done. Bleed the computer player down to zero. They won't
               get more mana until their turn. Now you are safe from Crack's Call
               or other spells. This won't work if they have Flame Strike or other
               non-targeted damaging spell (Wrack, maybe others).
             - The mana leak spell will drain 5 mana per combat round from the wizard.
               If you can make the battle go for the maximum 50 rounds that is 250
               mana! For example, if you have a flyer to attack a city with only
               non-flyers. When the mana is gone - no more Cracks Call.
                                                       [BLJ, Drew Fudenberg, DC]

   4.23) How Can I Get Treaties Started? And keep them in effect?

   A note on diplomacy. The stronger you get, the more difficult it will be to
   maintain good diplomatic relations with the other wizards and the more likely
   they will be to declare war on you. They will not allow you to grow strong
   unchecked.   [from the v1.31 patch README file]

   See 10.9) Diplomacy: I can't keep peaceful relations with the other wizards.

4.24) Just Cause Reduces Unrest

   Just Cause does more than increase your fame. It reduces the unrest level in
   all of your cities by one. I cast it as soon as I can and move my tax rate
   up to 1.5, and rake in the gold.   [disney@cybernetics.net (Dennis Disney)]

   He should move it up to 2.5 at that point, and rake in the gold. I didn't
   figure out the optimum tax rate for over a year of playing the game, so I'd
   guess most people just leave it at 1. But check it out: set at 2, with a
   pair of troops in the city and at least some temple-type buildings, you can
   keep unrest down to 0, 1, or 2, and get double the tax from all the rest.
   When I'm playing death magic, I usually end up with 6 or 8 undead troops
   as a garrison, and I can often set the tax rate to 3.0 without causing much
   unrest at all. With life magic, Just Cause is as good as two troops in
   every city, and I usually find a 2.5 rate is best until I take a lot of
   neutral mid-size cities; then I have to drop it back to 2.0. But it's
   silly to set it less than 2.0, except in rare cases at the beginning of a
   game. (In the very rare and difficult case of playing Klackons from the
   start, at least you have the advantage of taxing at 2.5 on turn 1, and
   raising to 3.0 as soon as you have a shrine.)   [DP]

4.25) I've built everything I can - what can I do about continuing unrest?
----

   1. Reduce taxes (if you don't need the money)
   2. Ignore it (it won't kill you)
   3. Cast Just Cause (reduces 1 unrest in every city!), or Stream
      of Life or Gaia's Blessing on the restless city
   4. Garrison troops in that city. Every 2 units reduce 1 unit of unrest.
      This makes Halflings a joy to conquer, since local riot police (aka
      spearmen) can cheaply pacify the populace permanently. They only cost one
      food to maintain, and every pair of them brings a rebel into line to
      produce three food and pay taxes. Actually, any race has this advantage
      when the city has an Animist's guild.
   5. Kill Klackons on sight (raze Klackon cities...)
                                            [gunzler@netcom.com (Mitch Gunzler)]

      Right on! Here's a tip: you lose fame doing that, based on the size of
      the city. If you attack with a flier, fly INTO the city and stay there
      without fighting for 50 turns. You'll do massive damage to the
      population, making the city smaller next turn. Do this until it's smaller
      than 5 THEN raze it, and you lose less fame. Downside is, you'll destroy
      buildings, so you won't get the money for them when you raze it, and
      sometimes garrisons go away, so you won't get the 1 fame if there's less
      than 4 left in the final battle. You also won't get the experience for the
      garrisons that went away, but I'd say overall, it's better to keep as much
      fame as possible.   [DP]

4.26) Do NOT neglect libraries, sages' guilds, universities, etc.

    Do NOT neglect your 'civilian' sources of research: libraries, sages'
    guilds, universities, and wizards' guilds. These sources will often give
    you twice as much research as you have powerbase, from these sources alone.
    An advantage in spells is decisive - a small number of invisible or flying
    units with ranged attacks can wipe out a much larger stack of units without
    magical aid. And it need not be said that call lightning plus a flying unit
    is absolutely devastating against non-flyers . . . just sit back and wait,
    they'll die sooner or later.
                                [jrk3g@darwin.clas.Virginia.EDU (Jeffrey Robert King)]

    4.27) Build roads!

    Build roads! Even better, if you have sorcery magic, make all your
    roads enchanted roads (zero movement cost). You can defend your whole
    kingdom with one stack, and get units to the front line instantly.
    Always put 4 engineers in a stack and have them build together.
    They'll build one square of road every turn on most terrains, the
    fastest possible rate...   [Andrew B Potratz <ap2a+@andrew.cmu.edu>]

    Not!! I've got a secret, nyah nyah nyah!

    Ok, I'll tell you: It's YAB (yet another bug) -- you can move the engineer
    off the square after telling a different one to build the road. The game
    figures the time to build based on how many are there at the time, then you
    move them away and have THEM build roads, too. One engineer can build on
    grass in 1 turn, so if you have a wind walker carry them (a djinn will do,
    or put Jaer to work), you can build FIVE squares of road, IN LINE, in one
    turn, with FIVE engineers, so long as the last one is on grass, the next to
    last on river, and so on. The first can be on mountain or swamp, the worst
    terrains.

    Even better, cast endurance on your engineers, and they will not only walk
    faster, they will build twice as fast. You can use 3 "enduring" engineers
    to do the work of 5. Dwarven engineers also build twice as fast, normally,
    and with endurance they are four times as good. If you don't have a wind
    walker to spare, there are other solutions: path finding/endurance will let
    you build three squares per turn if the last is grass; mix a high elf unit
    with dwarven engineers to get pathfinding without the spell, add a ranger
    to any type of engineers, or "play leapfrog" to get almost the best rate.
    Or cast flight or chaos channel (hoping for flight) on them. Just remember
    only one engineer has to stay behind to finish the road.

    On Myrror, where all roads are enchanted to begin with, a wind-walker (even
    if he flies at 2) with 10 engineers can build 10 new squares of road per
    turn, so long as any ONE of them is grass and they're all adjacent to the
    existing road! It's YAB: a unit leaving the stack of a wind-walker can move
    its full movement allowance, then still have .5 movement left. It can do
    this over and over and over and over in a turn so long as it always moves
    back to the wind walker and moves away again. So, move 5 engineers onto the
    mountain, tell one to build a road (one turn), move the other four back down
    the enchanted road to the wind walker. Repeat. Move the last engineer onto
    grass; because of the bug it still has movement, and builds the road. You
    can extend ten different roads in ten different directions, one step per
    turn, using only ten engineers and one wind walker.   [DP]

    4.28) Roads can be used against you (and how to prevent it)

    Enchanted roads on Myrror can be used against you. If you make a road

        grid that connects all your cities, rampaging monsters can get on it
        and scoot to some undefended city. [jbrown@u.washington.edu (Jeffery Brown)]

        Solution: place Paladins or other troops along the roads in strategic
        locations so that troops must go around off the road or attack that unit.
        They are slowed down by one turn <min> allowing forces to be brought up to
        protect nodes and/or cities.   [spido@clark.net (DriveBy Billy)]

        Nightblades make good invisible sentries. Enemies can't just go around
        because they don't know the Nightblades are there.   [bing@its.bldrdoc.gov]

        Even better, if an enemy wizard bumps into the nightblade / night stalker
        and summons four or more phantoms/elementals, you just stand there and when
        the battle is over, you gain 1 fame! AND your nightblade gains experience
        for each of the summoned creatures it never hurt at all! (YAB...YAB..)
        If he only summons three phantoms/elementals, you can still gain 1 fame
        (and 8 experience) by killing one of the original attackers and leaving
        the phantoms standing there looking stupid.   [DP]

        4.29) When a city has minerals, build a Miner's Guild early.

        If you have any mines nearby, build a Miners Guild early. If you left click
        on the gold on the City Screen, it will tell you how much gold you are
        getting from a mine. If you get any, build a miners guild.
                                                                    [Bill Poitras, DC]

        Miner's guilds only give half the value of mines, rounded down, and cost
        3 gold upkeep, so there's no point building them until the city is large
        enough to make the *production* from them useful for building other things.
        Even if there were two gem mines, a miner's guild would barely pay for
        itself. Exception: dwarven cities, which double the value of the mines,
        so miner's guilds are worth double also.   [DP]

        4.30) Get Rid Of Your Own City

        There is a way to get rid of one of your own cities. Perhaps it is blocking
        a mineral deposit, or perhaps it is a Klackon city that wish you had razed
        when you had the chance. Just set it to produce "Settlers". Each Settler
        will reduce the population by 1K. When the population drops below 1K, the
        last Settler gets up and goes, leaving nothing behind! You can either use
        the settlers or disband them.

        Note: Sell off all the buildings in the city first.

        The smaller the city, the quicker this process goes. You will need to buy
        part of the production of the last settler or two. You have to admit, this
        is more humane than simply killing Klackons on-sight, Also it doesn't reduce
        your fame.   [BLJ]

        It can be very expensive or very slow to get rid of Klackons that way. I
        say: why be humane? They're bugs! And the fly-in-to-destroy method saves
        most of the fame (see above).   [DP]

        4.31) Changing Tundra to Grassland

        Normally, tundra cannot be changed by the "Change Terrain" spell.

However, if you cast "Raise Volcano" on the tundra and
then cast "Change Terrain" three times, you get beautiful grasslands.
For 350 mana, you have converted a tundra to grasslands. Expensive, but
cool. This trick will probably also work with "Raise Volcano" and
"Gaea's Blessing".
                                        [John M. Ewing, john.ewing@cnsw.com]

...Yes, it does. If you don't have Change Terrain, but do have Gaia's (note
spelling) Blessing, you just bomb all the tundra near a city and let the
Blessing convert them to hills. You won't get grasslands, but hills will
give you a 3% bonus to production. You can also bomb swamps and deserts
near your cities, and eventually they become 1/2 food and 3% production,
which is better than the original terrain.   [DP]

4.32) Destroy Own Buildings for Fun (and Profit)

Because of the way the game was written, once you have the Spell of Mastery,
you should immediately TEAR DOWN every library in every city where it isn't
required for an alchemist's guild. And most especially, tear down every
magician's guild that isn't being used to produce warlocks or magicians.
This will provide an immediate pile of gold, save you upkeep, and in the
case of magician's guilds, increase your mana income you can use on skill.

Every time you capture a city, TEAR DOWN any buildings you don't need, and
aren't likely to need anytime soon, like for several examples, a shipyard
in a city that's nowhere near to building a merchant's guild, a stable in a
city that's nowhere near to building an animist's guild, an armorer's guild
in a city you aren't going to build a war college in, a fighter's guild and
armory and barracks in a city that is never going to produce units, and a
smithy in a city that will take over 60 turns to finally get a builder's
hall, granary, and a shrine before it can finally start working on a market.
There is no reason to pay the upkeep on the smithy for all those turns while
waiting for the other buildings to be completed.   [DP]

4.33) Scout with Surveyor [DP]

To locate an enemy city on the edge of an area you haven't mapped, use the
surveyor. It will tell you whenever you point to a spot within three steps
of a city, even if you can't see it. You can also tell where nearby cities
are in unmapped areas by noticing any "shared" terrain near your cities.
E.g. if only the northeast and north-northeast squares are shared with
another city, you know exactly where that city is located: two spaces
northeast of your north-northeast space.

4.34) Axes, the Ultimate Weapon [DP]

If a hero uses thrown weapons, an axe will add to the thrown value as well as
the melee value, providing a double benefit. A bow adds only to bow attacks,
not melee, a staff or wand adds only to magic missile attacks, not melee, and
a sword or mace adds only to melee, not thrown, but an axe adds to both. If
you're enchanting a weapon, you should almost always make it an axe for that
reason. Besides, an axe can be +6 attack, more than a sword (+3) or mace
(+4), which helps a first-strike hero greatly also. By the time you have
enough skill to be worth the time to enchant an item, you'll probably have
either a thrown-weapon or first-strike hero somewhere.

4.35) Graceful Retirement for Heroes Beyond Their Prime (Or Not) [DP]

   When you've decided to disband a hero, and you know you never want that
   same hero again, don't just disband it. If you kill it off in a battle that
   you win, you won't lose any fame, and you won't have to worry about getting
   that one again in a summons or offer. And if the hero is too tough to get
   killed by anything nearby, you CAN throw Cracks Call on your OWN heroes! Be
   sure to remove all the items first!

==
5) Favorite Races
==

   This section covers various people's favorite races, and why they like them.

   Look in Table B at the back of the Manual. It gives you an overview.

   Of course, one should plan to take over cities manned by other races. The
   starting race determines how you play at the start. Later in the game the
   choice of starting race has less impact.   [Drew Fudenburg, DC, BLJ]

5.1) High Men - With Paladins Rule

   Paladins are great! Their innate immunity to magic, generous shields, first
   strike and armor piercing capabilities make them excellent offensive weapons.
   Paladins can destroy a lot of lesser units without even taking damage.
   Adding a little magic can make them even better. Missiles can hurt them, so
   Guardian Wind is a great addition to any paladin. They can't first strike
   what they can't hit, so if you can, cast Flight on them (in or out of combat)
   or cast Web on their opponent. Paladins have to fight "negate first strike"
   enemies, such as Pikemen, on more even terms, so be careful. With a few
   precautions, your Paladins can mow down just about everything.

   The building capabilities for High Men allow them to make very advanced
   cities that produce a nice cash flow, be sure to use it. (bank, mechanicians
   guild, merchants guild, etc...)   [Matt Carlson, DC]

   Races which produce warships (High Men, Barbarians and Orcs) are good if you
   decide to rule the sea. 2 warships together are good enough to keep the
   opposition from landing troops on your soil, unless of course they are
   escorted by Warships (for some reason the computer almost never produces
   warships).

   High Men (humans) are a great balanced race. No special abilities, or
   strange troops like Stag Beetles, or Griffins, but like in many fantasy
   games, humans can pretty much produce all "normal" troops (Paladins,
   Magicians, Priests, Warships).   [Bill Poitras, DC]

   One thing bad about Paladins is they take a lot of buildings to produce, and
   also quite a few turns just to build one unit. If you're up against someone
   like Tauron who is constantly destroying your buildings and reducing your
   production rate, you find yourself unable to reinforce/replenish your armies.
   Paladins also don't do very well against Griffons or other flying units, I'm
   unable to take advantage of first strike.
                                        [rainbow@apxws48.ih.att.com (Rob Buchner)]

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   -------------------------------------------------------------------------------
   5.2) Barbarians - Fast Growing, Axe Throwing, Berserk Hordes
   -------------------------------------------------------------------------------

     These guys reproduce quickly, and benefit immensely from experience gains.
     Both normal and thrown attacks increase with level.
                                    [jrk3g@darwin.clas.Virginia.EDU (Jeffrey Robert King)]

     Berserkers make good ground troops.  Barbarians also produce Warships, good
     for ruling the sea.                                           [Bill Poitras, DC]

     Barbarian troops have excellent attack, but tend to be vulnerable. Lack good
     ranged troops. Poor building, conquer smeone who can. Good attrition troops
     for node clearing.
                                                                      [MadKaugh]


   -------------------------------------------------------------------------------
   5.3) Nomads - Tough Rangers, Horsebowmen, Flying Griffins and Extra Gold
   -------------------------------------------------------------------------------

     Don't forget Nomad griffins (flying, first strike, armor piercing) and
     pikemen (negate first strike, armor piercing)!  And don't forget about their
     rangers! That PathFinding ability is ever so nice.  Put it all together,
     and Nomads are one fine race - they're my fave.
                                                    [fishkin@parc.xerox.com (Ken Fishkin)]

     HORSEBOWMEN!  Their cost is only 60 production points, and they have both
     a decent ranged attack and melee attack.  Now they are toast against High Men
     Magicians, or ultra-elite slingers or Longbowmen, but against most normal
     units in the early going, they rock! Since they have a speed of two, they can
     move just beyond melee range, and then unleash their missiles, to avoid the
     range to-hit penalty.

     I find that on Impossible level, fast development is imperative.  A stack of
     eight horsebowmen and one ranger can move four spaces over any land terrain
     every single move.  Horsebowmen are available with stables, and Rangers only
     a bit later.  And you can build eight horsebowmen and a ranger in the same
     time it would take to build 3 Paladins or Elven Lords.

     If you start off with a Nomad city, you should be able to explore and
     overrun your home continent pretty early on.  And this is really important
     at impossible level, when your opponents get so many advantages.  Finally,
     nomads produce 50% more trade revenue.    [cox@tachyon.unx.sas.com (Jim Cox)]

     Nomads have good units, but are slow to grow. Don't play them, conquer them
     and use them.
                                                                      [MadKaugh]


   -------------------------------------------------------------------------------
   5.4) High Elves - Extra Magic and Longbowmen
   -------------------------------------------------------------------------------

     Elven longbowmen have nice range, and can really impact the early and middle
     games, especially when going after magic nodes early in the game). However,
     they have the drawback of taking a loooong time to produce, so expect rough
     going at the start.                         [dbe@crl.com (Dale B. Elliott)]

     High Elves are cool.  They're the only Arcanus race that gives you mana
     simply by existing (based on the size of the population), and longbowmen are
     EXTREMELY deadly, and VERY cheap.  All you need is a sawmill and a barracks
     to start making them.        [icarus@titan.oit.umass.edu (DOUGLAS W HIGGINS)]

     High Elves produce Elven Lords (powerful ground troop) and LongBowmen (good
```

       missile troop) and also can produce Magicians, which are pretty powerful.
                                                            [Bill Poitras, DC]

       They tend to rebel a bit in the late game due to the lack of parthenons,
       cathedrals, & oracles. Still, this is tolerable, and the innate power makes
       up for lack of upper religious buildings to a considerable extent.
                                   [jrk3g@darwin.clas.Virginia.EDU (Jeffrey Robert King)]

       High elves can't even do parthenons, and they have big problems with unrest
       because of it, so even with elven lords and longbowmen they aren't that
       great.   [DP]

       Actually, the magic bonus isn't that great in the late game. Since a High
       Elf city can only have a max (and unlikely to get that high) of 25 population
       the max magic from population and religious buildings is 15. The magic
       produced from any city that has a cathedral is 10, no matter what the
       population. The fact that you can't produce "purifiers" means that you are
       subject to Corruption. In addition, you don't get the riot suppression.

       Counter-point, to my previous statement. The +1 to hit and Forester is
       great.
                                                    [Brian Wade (FLEBO@AOL.COM)]

       High Elves are a good race to play if you want a challenge. They have good
       units, but they are so painfully slow out the gate. You are basically giving
       your opponents dozens of turns of head start if you play High Elves.
                                                                    [MadKaugh]

    5.5) Dark Elves - Magic Power Incarnate

       The Dark Elves are just too good. Once you have a wizards guild you can get
       Warlocks - 8 or 9 fireballs in ranged attack! Plus defense ignoring Doom
       Bolt! You also have healers. Their fantastic stables produce Nightmares
       which are a somewhat rare combination of flying and ranged attack (but they
       only have 2 figures). Dark Elves are just too good!   [Jacob Jonsson, DC]

       Even Dark Elf spearmen are pretty tough. With 8 figures and a ranged attack
       of 3 (Elite), you get a 24 ranged attack. Not bad when the maintenance is
       only 1 food!   [BLJ]

       A single Nightblade is a good city defender - too good! Since the computer
       can't see anyone to attack you can just click on AUTO and wait for time to
       run out. Then you win by default. [mbarnes@cs.montana.edu (Michael Barnes)]

       I just love them, half for the warlocks, half because they pump my power base
       so high I can work up a massive casting skill in a hurry. And another half
       because those spearmen get a 24-point missile attack at essentially no
       upkeep! They get all the good buildings except cathedral, they build the
       only naturally invisible units (with very little investment), and one of the
       very few walking units that can get first strike against flying units, the
       only unit that gets auto-kill against most heroes and nasty creatures (two
       bolts from warlocks, and the demon lord is history), and they look and sound
       so *cool*.   [DP]

       Dark Elves are pretty tough, but you use up 3 picks to get them. Also, they
       cause high rebellion rates in enslaved races.
                                              [Brian Wade (FLEBO@AOL.COM), BLJ]

       Dark Elves produce some of the best units. Dark elf spearmen for cheap ranged
       magic, and the only invisible normal unit in the game. One invisible unit can
       keep a city or node from falling to normal units (but not undead).
                                                                    [MadKaugh]

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5.6) Lizardmen - Ideal for "Small" Land
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   Swim for early exploration. Especially beneficial on "Small" land. Also,
   surround a land mass with Dragon Turtles and kill every ship that ventures
   out.   [dbe@crl.com (Dale B. Elliott)]

   Lizardmen are rather restricted in their buildings and units, but early on
   swimming settlers are great, and dragonturtles come online sooner comparable
   units (eg Stag Beetles). Contrary to the v1.31 readme Lizardmen can build
   Armorer's Guilds and in fact need to do so to enable Dragon Turtles, which,
   btw, cost only 100 not 120 as stated in the MoM manual.
                                 [danhite@aol.com (Dan Hite), Drew Fudenberg, DC]

   Lizards are pitiful: no sawmills or miners, very little mana and
   research, terrible unrest, lousy farmers, useless units. The only thing
   that makes them any better than Klackons is water walking and extra hits.
   They are pitiful because without sawmills, forester's guilds, miner's and
   mechanician's guilds, their productivity absolutely SUCKS, even ignoring that
   without foresters and animists they can barely feed themselves, even ignoring
   that most of them are rebels because you can't do parthenons, cathedrals, and
   oracles. Lizards are almost as bad as Klackons, and I always raze them. [DP]

   Lizardmen units are buff and are easy to start with. Javelineers are not bad
   missile units. The ability to swim lets you conquer anywhere without the need
   to do the shipwright track, but the swim movement is slow. They need to
   conquer a builder race.
                                                                     [MadKaugh]


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5.7) Halflings - Mighty Midgets
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   Halfling farmers produce 3 units of food (other races, 2). That makes it a
   lot easier to support big armies. (Races that can build Animist Guilds
   can get this advantage late in the game.)

   Lucky also makes shields 40% effective instead of 30%, lifts the base To-hit
   from 30% to 40%, and adds an extra resistance (cross).

   Halfling slingers have numerous advantages, and can be the best range attack
   regular unit. Unlike Paladins, they require only a few buildings and can be
   available very early in the game. They are lucky, giving a plus one to hit,
   defend and resist. Most important, they have 8 figures, so each enhancement
   produces 8 hits of benefit. Elite Slingers typically do 4*8*.5=16 hits
   damage. By comparison, Elite Longbowmen, another contender for best range
   attack regular unit, do 6*6*.5=18. But, if you add in Lion Heart (+2),
   Mithril (+1), and Warlord to get Ultra-elite, you have Ultra-elite Slingers
   with 7*8*.6=33.6 and Ultra-elite Longbowmen with 9*6*.6=32.4. With Crusade,
   Adamantium, Flame Blade, or Giant Strength the slinger's get further ahead of
   the Longbowmen. Because they both get +1 to hit, Slingers and Longbowmen are
   better than just about any other missile attack regular unit.
                                     [cptstern@Cyberquest.com (CaptStern) and BLJ]

   Giant strength does not increase missile attack. Leadership does, but only
   half as much as the increase to melee strength. (I.e. it takes a SUPER
   leadership at level 9 to give a +4, divided by 2, a +2 to missile strength;
   8th level superleadership, or normal leadership, can only increase missiles
   by 1 at most.) Lionheart should be mentioned here, since it does increase
   slings and arrows (but not magic missiles), and is GREAT on slingers.   [DP]

Slingers at recruit level still have 8 figures and the lucky bonus. But
don't expect them to single handedly take out powerful monsters until they
have at least *some* of: ultra-elite or champion rank, mithril or adamantium
weapons, lionheart, flame blade, Giant Strength, holy weapon, leadership or
holy bonus. Slingers with a lot of enhancements can punch through the 50
shields of missile immunity. Halflings and death magic do not make a strong
combination.
                         [BLJ, wagnere@Informatik.TU-Muenchen.DE (Erwin Wagner)]

If what you say about defense being per-figure is true, I don't see how a
single slinger figure could ever hope to overcome a 50 defense. If it hit
8 out of 8 it would probably still all be blocked. If you're talking about
a unit with admantium, flame blade, lionheart, holy bonus (arch angel, not
paladin), superleadership, high prayer, AND crusade/warlord, then geez...
throw all that onto a hammerhand, and you'd have a 42-hit unit that throws
150 points of attack with a +4 bonus. Giant Wyrms would run off screaming.
By the time you can do all THAT, you can just send in Roland or Fang and
kill the missile-immune unit with a single first-strike attack, or drop a
doom bolt or flamestrike on its head, and never mind the slingers. And it
is worth noting that slingers only get 6 shots.   [DP]

Slingers are nice, but not by themselves enough of a reason to choose
Halflings - Halflings have many other disadvantages compared to more advanced
races such as High Men, Nomads, or High Elves (lack of university, and all
that is derived from it, can really hurt), and all three of these races have
a rangestriking troop comparable to slingers. (It need not be mentioned that
a unit of High Man Magicians, which are missile immune, will wipe the floor
with slingers.)   [jrk3g@darwin.clas.Virginia.EDU (Jeffrey Robert King)]

A side comment, missile immunity against a beefed up slinger unit is not good
enough. Not to mention I'm killing one magician unit per turn via magic
spells. Slingers are also highly resistant. Not to mention when I close the
distance magicians die of fright (no defense, no hearts). You can counter
missile weapons, you can counter magic range attacks (mana leak, resistance
spells, defensive bonuses, magic immunity, etc). But when all is said and
done, slingers have a pretty good secondary attack, ie melee combat. Not
true for magicians.   [rainbow@apxws48.ih.att.com (Rob Buchner)]

I've had enhanced halfling slingers take out skeletons. Warp Wood or Guardian
Wind can hose slingers. Slingers melee attack is pretty superb. They can
melee flying units, and I've had a unit of slingers take out an air elemental
that gave my heroes trouble.
                                                                  [MadKaugh]

I'm just about convinced Halflings are the best starting race. You don't
realize how convenient the food production bonus and the unrest reduction is
until you play any of the other races. Indirectly this compensates for any
mana/research shortcomings. Halflings translate into more gold, more troops,
faster production, quicker expansion. And the clincher is that 4 slinger
units can just about defend a city against all attacks even without the
support of Life magic. It is such a joy not to constantly lose back captured
cities. And finally, slingers can be built quickly and easily with minimal
support costs. I can expand my empire at a faster rate. This means that
halflings may even have a mana/research advantage, through faster conquest.
At least any shortcomings are minimized.
                                      [rainbow@apxws48.ih.att.com (Rob Buchner)]

Halflings are hands down far and away the easiest to start with and have the
best units. The spearmen, the swordsmen, and the slingers are all great
units. I tend to not use a whole lot of shaman type units, but the halfling
shaman units seem comparable for what they are. I'm not crazy about the
halfling bowmen, I've only built a few in all the time I've played MoM, and
that only to try them. In the endgame, they have no exceptional power units.
You have to conquer the a city from another race to get some. Also, you have
to conquer a builder race like the humans or orcs to settle and build the

       bulk of your cities.
                                                                             [MadKaugh]

    5.8) Trolls - A Regenerating Army That You Can't Stop

       TROLLS RULE. They regenerate every turn in combat, so if the enemy moves the
       same speed as you you can just outrun him and heal. Even if its a full stack.
       Also computers in cities usually just sit there and wait for you to approach,
       so your troll can fight them one by one and heal in between. War Trolls are
       especially powerful because their 2 movement allows them to outrun most units
       while healing.

       I started recently with trolls and with the 2 trolls that I started the game
       with I was able to take over half of Myrror. They are extremely powerful.
       Note that trolls get 4 HP instead of one the spearmen usually get and also
       +attack. Trolls also come back to life if they die in a battle but you win
       the battle.   [Mike 'Krazy' Donais, DC]

       And just think what you can do with an invisible Troll or two. Hit, run
       away, heal, repeat.   [bing@its.bldrdoc.gov -- Bill]

       Death Troll! Trolls are not too bad in the early game time, but the troll's
       best unit 'War Troll' has no excellent skill, or other benefit, besides
       regeneration. However, with Death magic, trolls have a good strategy. Among
       Death spells, there is 'Black Channel,' which makes a unit more powerful
       with an extremely low upkeep (1 mana). However, it also makes the unit
       undead, meaning that that unit cannot be healed. This is 'Black Channels'
       shortcoming. Now, if you make (WarTroll + Black Channel) all is good: War
       Troll have more status, and its upkeep (4gp,1food) is reduced to '1 mana'.
       Since War Troll has intrinsic regenation, 'unhealing' is no matter.

         Merit 1: 1 mana upkeep
         Merit 2: 'unhealing' weak point is covered by regeneration.

       Now, I play 'Death Troll'. I started with Warlord+Myrran+Alchemy+Death
       Spell. Because trolls can't have alchemist guilde, Alchemy is a good pick
       (alchemy gives units magic weapons). With warlord unit can be champion. In my
       play, I wait until War Troll becomes a champion, then cast 'black channel'
       on it (12melee, 7defense, 7hit). This saves me money, food.

       Remember that Black Channeled units can NOT get more experience, so, black
       channeled unit can NOT level up. Therefore, 'wait, and casting' and
       'immediate casting' have trade off.   [Dong-Young Kim <borges@orgio.net>]

          Note: Also mentioned in section 9.2 Healing the Undead.

    5.9) Klackons - Kill them on sight? You decide . . .

       I like Klackons too; sure they can't build much, but they don't need to!
       Stag Beetles are even stronger than Dragon Turtles, and since unrest in
       Klackon cities is reduced by 2 if you have a Klackon capital you can scooch
       the tax rate up at the very beginning of the game.   [Neal Dutta, DC]

       In article <D4tLy5.5AH@murdoch.acc.Virginia.EDU>,
       jrk3g@darwin.clas.Virginia.EDU (Jeffrey Robert King) writes:
        > except Klackons, which I raze on sight.
          Bad move!
          1) Klackons are one of the few races which can build engineers.

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     2) Switch Klackons to 'trade goods', and you'll be swimming in money.
     3) The Stag Beetle is a very decent little unit.
                                              [fishkin@xerox.com (Ken Fishkin)]
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Jeffrey Robert King replies:
:   1) Klackons are one of the few races which can build engineers.

High Men and Orcs - better, and can build engineers. To say nothing of
Beastmen and Dwarves.

:   2) Switch Klackons to 'trade goods', and you'll be swimming in money.

Nomads. And money isn't that much of a problem, and less of a solution.
Rebellion, lack of powerbase, no research - those are problems.

:   3) The Stag Beetle is a very decent little unit.

No match for a dragon turtle (same stats, swims, same building required), to
say nothing of high-end units like Pikemen, Paladins, 6 figure High Men
Magicians, etc.

And finally, Klackons rebel like crazy, and there's nothing you can do about
it. 50% rebels with tax on 1.5 is typical for me - the city can hardly keep
itself fed, let alone feed a garrison, support armies in the field, and
actually produce something.

As for using them as a capital race - you'd have to be crazy. Without any
religious or academic buildings worth mentioning, you will have NO power base
or research, and ruling other races with Klackons is ridiculously unfeasible
(only Dark Elves inspire more rebellion in subjects, and that not by much.)

Suggestion to make Klackons workable: Allow them to build Temples, but not
Parthenons. (This would also allow Animists Guilds) This would reduce their
rebellion to the point where they might be comparable in usefulness to
Lizardmen or Gnolls - i.e. decent slave races, but you wouldn't want them in
charge.   [jrk3g@darwin.clas.Virginia.EDU (Jeffrey Robert King)]

I just sit in my city until I can make Stag Beetles. Then, I send them out
to take over the world. Early in the game not many units can kill a Beetle.
I can make an army of Beetles very early in the game (I just need Amoury and
Stables). Early on, one beetle can take out an enemy city. Later, I need to
gang up four or five of them.

If the game drags on too long, I have to put a hero into each stack of
Beetles just to make sure they pack the wallop they should.

One Stag Beetle can pretty much guard any newly captured city against the
original owner trying to take it back. Typically, when I take someone's
city, they don't come back at me with fire in their eyes. They counterattack
like lambs, attacking my Beetle with 2 or 3 Halberdiers. This is version
1.31, usually on hard level, sometimes on impossible. Of course, I
understand that if I let the game go on too long, they would attack with big
nasty magic critters and the one-Beetle defense wouldn't work. The key is
speed. Plus, if I take a stack of nine Beetles and hammer a city, I leave
the most injured Beetle to defend the city and move the eight remaining ones
onto the next city. The enemy is so engaged defending his next city that he
has no spare troops to send out to retake that first city. I rarely even get
challenged in those cities.

I can take out any city with mortal units. And I take them fast. I avoid
the ruins and nodes that have nasty magic critters and concentrate on taking
cities. The one time I needed to take over a city that had Death Knights,
I just stacked 27 Beetles next to the city and went in in 3 waves. I lost
the first wave, but the second wave won, even though it had heavy casualties.
                                                      [bing@its.bldrdoc.gov]

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    -------------------------------------------------------------------------------
    5.10) Dwarves - Productive Workers, Deadly Hammerhands
    -------------------------------------------------------------------------------

      Or how about the dwarves.  Hammerhands are probably the best hand-to-hand
      unit.  Steam cannon can inflict some heavy casualty and Golems are great
      against Halflings.  Plus they get a 50% production bonus, and build roads
      real fast.                                      [swang@ux4.cso.uiuc.edu (Ben Wang)]

      Dwarf Swordsmen have an unique property: they require *no* gold for upkeep,
      so you can post them in cities to reduce unrest.  They can even be good
      city-defender units if you build them near an Adamantium mine.
                                                      [ncl@philabs.philips.com (Nai-Chi Lee)]

      Tip:  If you have any dwarven cities, and you find a good location near a
            gold mine, you should definately build a Dwarven city by it.  You do
            this because Dwarves get more gold from gold mines. [DS]


    -------------------------------------------------------------------------------
    5.11) Draconians - Flying Firebreathers
    -------------------------------------------------------------------------------

      Their flying regular units (Spearmen, Swordsmen) really give you an
      advantage.  If a ground based invader (without missile attack) tries to
      invade your city, you can just wait for them to leave.  If you want to
      attack, you only attack when and where you decide.  Also, the breath attack
      gives an added punch.

      Draconian Halberdiers are a GOOD melee unit.  What with flaming breath
      and a decent attack they are even better than the Doom Drakes at elite
      level because they come 6 to a unit.

      Draconian Bowmen and Shaman are a rare combination of flight and ranged
      attack.  Also, Draconians can build most high-end buildings such as
      University, Bank, War College, Wizard's Guild, etc.  Finally, Air Ships are
      cool.
                                                      [Brian Wade (FLEBO@AOL.COM), BLJ]


    -------------------------------------------------------------------------------
    5.12) Gnolls - Least favorite!
    -------------------------------------------------------------------------------

      The gnolls are still the most pathetic things I've ever seen. They get no
      city upgrades, they grow slowly, and their wolf riders are nice, but can't
      even beat pikemen, which are only the second best unit for humans and nomads.
      They have nice halberdiers, but the dwarf halberdiers are better. To make the
      gnolls balanced, I would give each of their units an extra hit.  Then their
      halberdiers would be as good as pikemen, and their wolf riders would be as
      good as Wyvern Riders or Elven Lords. Come on, gnolls are supposed to be
      badasses, not wimps on the level of humans. I couldn't believe it when I
      looked at their units and saw one little heart.
                                                      [Dave (sungod@worf.infonet.net), DC]

      I like gnolls.  Sure they're low-tech, that's what subject races are for.
      You need engineers?  Conquer the Klackons.  You need magic?  Conquer some
      Elves.  The key that people are missing on the Gnolls is not their high-end
      units (wolfriders), it's their low-end units (spearmen and swordsmen).  The
      gnoll player should immediately go on the offense.  Make enemies, conquer the
      raider cities.  The +2 strength on their cheap fighters makes them more than
      a match for the early opposition on Arcanus.  Aggression, aggression,
      aggression. (Warlord wouldn't hurt either).  [Brian Wade (FLEBO@AOL.COM), DC]
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    Believe it or not, I play Gnolls. Willingly. Not only that, I play them
    usually led by an all-death or all-sorcery spellcaster, cutting down
    significantly on the offensive magic you can use to support the troops.
    The reason why? Well, to be honest, the real reason was to try a
    challenge :-), but I've found a pretty decent Gnollish technique:
    build lotsa cities right away, and forget buildings. You can't build
    them anyway. Maybe a stable or two. Crank out the troops. That's all
    they exist for. You then use your endless Gnollish hordes to take over
    the other races, whose slaves are quite happy to provide you with the
    nifty buildings your master race just doesn't want to bother with.

    Success? So far, I'm winning my fourth straight game on Impossible level,
    with maximized opponents (varying landmasses, though).   [David R. Henry, DC]

5.13) Orcs - A Well-Balanced Race

    Orcs is a good race to pick when you first begin to play MOM, because it is
    the only race which can build *every* city improvement available. Orcs have
    engineers to build roads, warships to rule the sea, Wyvern Riders to rule
    the sky (well, not really), and so on. The only problem with Orcs is that
    since they are such a well-balanced race, they lack those special elite units
    (such as Paladins or Rangers) that are vital to the success of other races,
    therefore you may get bored with this race after a few games.
                                            [ncl@philabs.philips.com (Nai-Chi Lee)]

5.14) Beastmen - Another Well-Balanced Race

    I consider Beastmen the equivalent of Orcs in Myrror, because they can build
    pretty much anything (except warships) just like Orcs. Beastmen's Centaurs
    are good for their ranged attack and movement points, but I find their other
    units to be rather ordinary and too costly.
                                            [ncl@philabs.philips.com (Nai-Chi Lee)]

    I like beastmen. They have good units (Minotaurs come to mind). They can
    build their cities up with the best of them. And to boot, they are a magic
    producing race. They have reasonable growth and unrest rates, and are a
    good choice for a "conquer Myrror" strategy. Unfortunately, you have to use
    3 picks to start with them.
                        [danhite@aol.com (Dan Hite), Brian Wade (FLEBO@AOL.COM), DC]

===
6) Favorite Colors of Magic
===

    This section covers people's favorite colors of magic, and why they like
    them. Unlike race, you are fairly locked in with your starting choice of
    magic. However, you can pick up additional spell books along the way (but
    your total is limited to 13).

6.1) Chaos Magic (Red)

    I have been playing as a chaos wizard, and if its damage you want, then it is
    here! Warp Lightning (better vs few shields) and Lightning plus 20 or 30
    mana (better vs many shields) are two of the most powerful spells in the

       game. Both of them armor piercing. Few units can survive their power (and
       the graphic is cool too...:)
                        [Tom Franklin, rainbow@apxws48.ih.att.com (Rob Buchner), DC]

       Chaos: Combat. Combat combat combat. That's what chaos magic is all about.
       Virtually all of the strategic weapons are chaos magic too. If you want to
       be able to demolish enemy cities without actually sending troops, this is the
       way to go. Hell hounds, in the early stages, movement 2 with breath attack,
       can quite easily take out most cities. You can explore, capture a few nodes,
       go through some ruins. It gets you a fast start which is important for
       learning the more powerful chaos magic spells.

       Doom Bolt is great against high defense or high resistance opponents. You've
       got spells for resistance, you've got spells for high damage to take out
       spell casters and missile units. You can focus on lots of units or single
       units. Quite flexible. Even in early stages, things like flame blade and
       immolation are quite adequate. If a city is tough, you can wear it down with
       chaos rift or call the void. Not bad. Not bad at all. Chaos magic also has
       the best combo of summoned creatures from early stages through the late
       stages. Take hell hounds, chimera, chaos spawn, and great drakes against any
       other four from each spell group, and you are an easy winner. Yes chaos does
       not have much in the way of defense, but thats not its strength. If you've
       got offense, use it. If you give the best offense a better defense, it would
       completely unbalance the game.
                        [rainbow@apxws48.ih.att.com (Rob Buchner), Jason Skiles, DC]

     6.2) Death Magic (Black)

       I was Myrran and playing dark elves so I had an advantage to start but,
       skeletons: quickly summoned early garrison for cities...and they're free.
       Black channels and darkness combo; this really gave me the power I needed.
       all my units were undead (heros,etc) and its not mana expensive to do.

       Zombie mastery absolutely essential. Creates an instant garrison any
       time you take a city, and failed attacks only make you stronger (besides
       the casting graphic is my favorite in the game).

       However... ZM is ridiculously expensive: 40 mana per turn to *maybe* get some
       zombies on a turn, vs things like 10 mana per turn for Crusade to give every
       unit +1 to hit, +1 hits, +2 attack, +1 resistance? For the 40 mana, you
       could summon better creatures than the average zombies you'll get, and that's
       not even counting the original casting cost and time. Besides that, it's
       worthless for creating a garrison, because Zombies do NOT control unrest.
                                                                              [DP]

       Life Drain: For each hit point drained you get 3 mana added to your spell
       skill pool. This makes Life Drain the only way to increase your spell skill
       other than pumping in mana from your powerbase.

       More Life Drain wackiness from Dirk Pellett:

         I can vouch for this, having seen my skill increase after the battle vs.
         what it was before, when I threw a lot of Life Drain spells in it. Not
         only do you get the units back as undead garrisons, you improve yourself as
         a wizard! Now I throw Life Drain every time I have the extra mana to spare,
         rather than just killing off the unit trivially with a hero or something
         and wasting the opportunity to increase my casting skill.

         I can imagine using this as a Channeler/Alchemist, or leaving a ruin close
         to my capital, so I can go in with a night stalker and Life Drain a war
         bear *almost* to death over and over and over... whenever I had any extra
         mana to spend. Also good would be a nearby lizard city producing recruit

      spearmen with low resistance and 16 hits. You'd drain them almost to
      death, or go ahead and kill the ones that were about to become regulars,
      converting all of your loose change into casting skill. A
      Runemaster/Artificer enchanting and breaking items gains mana equal to his
      casting skill each turn, and can then turn around and use that mana to
      increase his casting skill. Whooooa! This could conceivably let you pump
      your casting skill at an enormous rate! I'll let you know the results when
      I try it.

      Oh, here's something strange, I analyzed the best strategy to use when
      casting Life Drain against different resistance. I calculated the average
      points you drain per point of mana spent, to see which gives you the lowest
      cost per benefit. It turns out that when the resistance is 4 or less, you
      should always cast the minimum spell, 10 points, and when the resistance
      is 6 or more, you should always cast the strongest possible spell your
      skill and remaining mana allow (restricted to multiples of 5, of course).
      Here's the strangest thing: if the resistance is 5, you should cast the
      minimum spell unless you can throw 35 points or more, because 15, 20, and
      25 are worse than 10 and 30, which are equal.

      The break-even point is at resistance of 2, where you can cast 10 points
      into a life drain and expect to get an average of 10.8 points toward your
      casting skill. There are no naturally occuring units with that bad of a
      resistance, but if you can get a hero to throw Mind Storm and Black Prayer,
      you as the wizard can gain major skill by throwing Life Drain on some poor
      troll spearmen for as long as your mana lasts.

Mana Leak: Cast it, and arrange for the battle to go on all 50 rounds. The
opponent wizards will lose 250 mana points. You can even do this several
times in one turn. Repeating this a few times should take any wizard down
a few pegs. It's particularly easy to have a long battle when attacking a
wizard's city because the defenders don't generally come out to engage you.

They WILL come out to engage you, however, if you've cast a bad enchantment
that encourages them to kill you quickly, such as Wrack, Call Lightning,
Magic Vortex, AND Mana Leak. They won't come out just because you've cast
Blur or even Black Prayer, though. The easiest way to ensure a long battle
is to have invisibility or flight (Night Stalkers or Wraiths do wonders).[DP]

Black Wind: One of the few ways to kill opponents via overland spells.
Death Wish: Another way to kill via overland, on a grand scale.

Some cons:

Everyone hates you! Your undead units cannot be healed. Some spells like
Black Sleep never seemed to work enough times to make them worthwhile. No
direct damage (drain life is too slow, Death spell takes too long to get and
is only useful later in the game).

Your undead units are subject to banishment. This includes your heroes as I
found out to my dismay. I had Black Channeled a hero this worked out really
well (so he couldn't heal, he had a vampiric weapon and was pretty tough)
until a Dispel Evil spell banished him and his items forever.

Actually, the most difficult part of playing Death is surviving the early
stages of the game with skeletons and ghouls. They are very poor troops
because everybody seems to beat them. The cost mana to summon, they don't
heal, they move slow, so what if I don't have to feed them. And how many
Zombie troops are actually useful? Not very many. Having said that, I still
contend Death magic is quite awesome to play. Mana leak is a common spell of
enormous impact. When you can make combat drag on the maximum 50 rounds,
it drains 250 mana points from the opposing wizard. It also saps magic
range attacks by one per turn. Augment any starting selection with two Death
books, and no wizard can withstand you. Lycanthropy and Wraithform make you
immune to normal weapons including arrows and stones, which makes conquering

cities, particularly neutral ones, a snap. Wraithform also makes you immune
to webbing which is quite useful. Once you get past the common summoned
creatures, death can simply dominate. Taking them in order of cost, we start
with Shadow Demons. They regenerate, fly, have plane shift, magic range
attack. Who's going to kill you? No normal units that I could find.
Paladins? Griffins? Nope. Mincemeat.

On the other hand, Dirk Pellett finds Wraiths far superior to Shadow
Demons...

If you're going to take 11 death books, the spells to take are wraith and
black prayer. Almost no neutral city can stand against a wraith with its
weapon immunity, -3 life drain, decent defense, non-corporeal and flying.
Overland, they have nice speed. When they get beat up a little, go eat some
war bears or hell hounds. They can take on sprites and hand you a nice
little present at the end: another flying scout unit that can also take out
phantom warriors and beasts, zombies and ghouls, which are the wraith's own
weaknessess. Wraiths and the sprites they create for you work together very
well to explore / conquer the world. Wraiths are so good at taking cities
and ruins that they way more than pay their own upkeep and provide the mana
to summon the next wraith. Skeletons and ghouls are a waste of time, being
weak, slow (without flight), and un-healable (without regen or life drain).
                                                                      [DP]

You can take over both planes with shadow demons. And it's even easier to do
with Wraiths. With life-stealing attacks and minuses on the saving throws
(and add in Black prayer), they wade through everything and self-regenerate.
Death Knights are even stronger than Wraiths. I never even bother with Demon
Lords, which are supposedly the best units of all, because of the cost
factor. I don't really need them. All have high resistance against magic
which makes them difficult to dispel. There are cons, these summoned
creatures are not effective against the likes of sky drakes, great drakes,
great wyrms, etc. You'd best take out the other wizards fast. Also, life
magic can do lots of damage to your units. But that's what your normal
troops and heroes are for.
        [rainbow@apxws48.ih.att.com (Rob Buchner), danhite@aol.com (Dan Hite),
         BLJ, Peter G, Brian Wade (FLEBO@AOL.COM), DC]

Slingers and halfling shamans are common even in the starting cities, and
will blow away shadow demons fairly quickly because of their low defense.
And has he never heard of dark elves? They're pretty good at defending
their cities against slow-flying low-defense low-hits units. I'd like to
see him summon a shadow demon and send it into a city with eight dark elf
spearmen. Pure suicide.

For that matter, he mentions paladins... You're not likely to find any of
them sitting around in a starting city, but if you did, the shadow demon's
range attack would be worthless against the magic immunity, and its poor
defense against the paladin's armor-piercing counter-attack would leave the
shadow demons regenerating 50 turns trying to take out one single paladin
unit, IF it was lucky enough to live through every round of melee.

Shadow demons fly so slowly that they can't escape anything, making them
subject to first-strike attacks from barbarian cavalry, stoning by gorgons
and basilisks and cockatrices, breath/melee from draconian halberdiers and
swordsmen, and so on. Any city with a significant number of bowmen or
shamans will have enough experience to destroy a single shadow demon unit
by the time you get it summoned and finally get it to the city. By the time
you have a group of them together strong enough to survive, say, seven or
eight halfling shamans, you're paying a ridiculous upkeep and not getting
anything back while they wait for the last one to show up. And you could
have had wraiths instead. Suppose you finally have eight of them in one
place, and the enemy wizard's city is ONLY fifteen steps away. You'll pay
840 mana in upkeep while they go that far! Yikes!   [DP]

      Tip: If you find yourself at war with some jerk wizard and want to get even
            without attacking, use the Warp Node spell on all of his nodes. Past
            the casting cost there's no upkeep, so warp away!   [DS]

   6.3) Life Magic (White)

     Life: The ONLY way to go if you're playing a Warlord. Only Warlord plus
     the Crusade spell give you champion level units. But not just because of
     the Crusade spell. Life magic is by far the best at 'pumping up' standard
     units: Heroism, Holr Armor/Weapon, Invulnerability, Lion heart... Amazing.
     Prayer and High Prayer help a lot, too. These +1's start adding up in a big
     hurry. Also, Life magic gives you all the cool city enchantments.
     Inspirations is a must for any city, and don't worry about the upkeep. It
     only costs 2 per turn, and it can easily earn you 40 gold on a city that's
     set on Trade Goods, so these really pay for themselves, alchemy or no. Life
     magic gives you the freebies for switching planes, and also the game-securing
     Planar Seal.   [Jason Skiles, DC]

     Playing with all Life Magic spell books is the easiest way to start. You
     get Heroism, Holy Armor, Healing and many other great spells from day one.
     With those spells, it is possible to take over some neutral cities using your
     very first swordsmen/spearmen units (especially if you start with Dark Elfs,
     since they have magical ranged attacks). If you start with 11 Life books,
     you can even pick a rare spell such as Incarnation or Stream Of Life. Either
     spell will probably guarantee a winning game for you.
                                               [ncl@philabs.philips.com (Nai-Chi Lee)]

     Agreed, for a beginner, all Life is fairly easy to play, although you might
     have a heart attack if any marauders show up while you're summoning Torin.
     Stream of Life, while being one of the most useful spells in the game, is
     not a useful spell to begin the game with. It won't win battles, won't save
     your ass like Invulnerability will, won't defend your capital, won't take
     neutral cities like Heroism will, won't even hinder let alone banish an
     enemy wizard. It's strictly a late-game spell, despite its awesome power.
                                                                              [DP]

   6.4) Nature Magic (Green)

     Nature: My favorite. Lots and lots of critter summoning spells, plus
     the extremely useful Change Terrain and Earth Lore spells. Short on combat
     spells, but with Giant Strength, Stone Skin, Iron Skin, and whatnot, you
     can get by. Earth to mud is great if you've got missile troops, and crack's
     call can take out even the meanest bad guys. Regeneration is one of the
     most powerful spells around. Although it's expensive, a few of them can
     make a tough army unstoppable, because it's impossible to 'wear down' a
     regenerating army. If you don't completely smash it, it's back to full
     strength for the next fight. Water walking comes early.   [Jason Skiles, DC]

     Playing Nature Magic is tough, because you don't start with any good
     offensive or defensive spells, just some land enchantment spells which are
     all useless in the beginning. Be careful not to piss off any other wizards,
     or you will get wiped out soon. On the other hand, your cities can grow
     faster and be more productive through the use of those land enchantment
     spells. If you can manage to survive long enough, you start to get those
     better spells such as Iron Skin, Cracks Call, Call Lightning, Regeneration,
     Earth Gate, and so on. Now it is time to make the other wizards pay!
                                               [ncl@philabs.philips.com (Nai-Chi Lee)]

     Sprites are powerful early in the game. By using salami tactics, a single

      sprite can conquer a large earthbound stack, one creature per turn. (Salami
      tactics: Fly in, kill at least one creature with magic range attack, when out
      of ammo hit "Done" until you retreat. Since you are flying and they aren't,
      they can't touch you. Caution - this is extremely tedious.) One sprite can
      often mop up neutral cities and some enemy cities. But on impossible level
      the computer players have so many bonuses, one sprite will only be able to
      take out enemy cities very early in the game.   [????, BLJ]

      You want to play 11 nature books, you can piss off any wizards you like by
      sending in a couple of path-finding water-walking basilisks while he's still
      summoning hell hounds. *toast* But you have to watch out for black sleep
      and confusion! Basilisks can take out almost any neutral city (slingers and
      dark elves excepted) with the stone gaze and 30 hits, and will more than pay
      for themselves by taking out ruins with war bears, ghouls, zombies, sprites,
      and such riff-raff while moving four steps per turn anywhere in the world.
      They're not invincible, and shouldn't be sent in against phantoms, other
      basilisks, drakes, and the like, but you can find yourself the only living
      wizard on Arcanus quickly, and might even find a tower they can handle. [DP]

      I agree, though, that if you take ten nature books plus a skill, you will
      have an awfully hard time getting anywhere. Your best friend will be
      sprites, and they're kinda pathetic, actually.   [DP]

      6.5) Sorcery Magic (Blue)

      Sorcery: Neat. Neat neat neat. Confusion is one of THE all-time coolest
      spells, and certainly your best price/performance combat pick. I've
      successfully snagged everything from spearmen to storm giants with this
      spell. It only costs 15 spell points (11 if you've got ten books) so even
      early in the game you can throw two or three per fight. Phantom warriors
      and beasts are really nifty too. Sorcerers get the flight spell,
      invisibility, mass invisibility (another favorite) and (fanfare) Wind
      Walking. This is an amazingly useful spell. It lets the target and everyone
      stacked with him fly, AT HIS SPEED. I had Deth Stryke moving nine per turn
      and dragging four heroes and four sky drakes with him. A real experience if
      you're used to struggling with those damned airships. At the high end,
      Sorcery magic is awesome. Suppress magic is too cool for words, and Time
      Stop would be, if I could just figure out this mana thing. I have trouble
      keeping that spell up. Spell Binding (steal enemy global enchantment) is a
      winner as well, and the Sky Drake is the most impressive summoned creature
      I've ever seen.

      Because of YAB, Suppress Magic is too useless for words. You banish an
      enemy wizard while suppress magic is in effect, it can suppress his spell
      of return, without actually doing it right, and it will leave him "halfway
      back" -- able to cast spells in combat but not overland, and unable to talk
      with you or hire new heroes, and unable to cast another spell of return to
      actually get all the way back. If, like me, you love to rack up fame by
      banishing the wizards over and over, you will *never* use this worthless
      spell. The best substitute is Spell Blast, then you can let them throw
      any useless spells, and only worry about the bad ones, like disjunction.
      (Also saves you 40 mana per turn in upkeep.) Spell Blast also has a 100%
      chance of working, unlike Suppress Magic, which can let nasty spells slip
      through (Earthquake) while stopping ones you WANT to work (Enchant Road,
      Change Terrain).   [DP]

      Time Stop is the next best thing to Spell of Mastery. For all practical
      purposes other than ending the game, it IS the Spell of Mastery. And if
      you have at least 201 casting skill (counting your heroes), plus artificer
      and runemaster, you can maintain the spell *forever* (though it gets to be
      boring very quickly).   [DP]

   Spell Blast allows you to stop high-powered unfriendly spells before they
   happen. Spell ward protects you from summoned creatures in addition to
   adverse magic. And spell lock protects any of your enhancements rather well.
   Combine this with sorcery mastery and arch-mage, you can simply toy with
   the other wizards.
                    [BLJ, rainbow@apxws48.ih.att.com (Rob Buchner), Jason Skiles, DC]

   Don't forget Guardian Wind and Magic Immunity separately or in combination
   on a unit. Being immune to all long ranged missile and/or magic attacks is
   great for any offensively powerful but defensively weak unit.

   Note the high mana upkeep for summoned islands (4 or 5 mana). Depending on
   your specials (summoning, lots of sorcery books, etc...) it may be cheaper
   to just disband the island when its use is done and summon another one a few
   turns later to the exact spot you need it.

   I've only played one game w/ a custom wizard so far, and he had loads of
   Sorcery. I LOVED it! Some people will claim flight and windwalking are
   great and the best part, but I found that my favorite spell was:

   Magic Immunity! Not only are you immune to all funky spells (except for
   dispels, but I had sorcery mastery which made it hard to dispel), but
   all ranged magic attacks are reduced to ZERO! Throw in guardian wind, and
   for about a 5 or 6 mana upkeep nothing short of hand to hand combat can
   touch the unit!

   Invisibility can do the same thing, but there are always those Sky Drakes,
   etc. that can see past invisibility. I preferred to cast invisibility only
   in combat just to protect specific units at specific times.
                                                               [Matt Carlson, DC]

==
7) Favorite Wizard Starting Picks
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   One of the best aspects of Master of Magic is that your starting picks (race,
   magic, and retorts) can dramatically change what you need to do to win.
   This section lists several people's favorite picks, along with some
   discussion of why they like them.

7.1) Chaotic Warlord with support from Sorcery and Life

   I usually start off with 6 chaos, 1 sorcery (just to get the confusion spell,
   if I can), and 2 life..... and the Warlord attribute.
                                               [dbe@crl.com (Dale B. Elliott)]

7.2) Famous Sorcerer Wants heroes

   Alchemy (good to drain money to summon stuff), artificer, conjurer, famous
   and charismatic... plus 5 sorcery spell books. Sorcery is really neat,
   all you need to do is to invest some time in artifacts creation and make
   some Amulet of flying + magic immunity, then you are ready to roll.
                                               [blood@jolt.mpx.com.au (Edward Chan)]

   Alternatively, replace conjurer and charisma with 2 Life books. You don't
   need to conjure anything. With 2 Life books, you can pick Healing, and that
   can effectively double/triple the strength of your heros. They can fight
   longer before being worn down. You can think of it as an insurance policy

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           for heroes unexpectedly near death.
                                        [rainbow@apxws48.ih.att.com (Rob Buchner)]



     --------------------------------------------------------------------------------
     7.3) Quadruple Power Nodes
     --------------------------------------------------------------------------------

       Also note: Chaos/Nature/Sorcery Mastery + Node Mastery = Quadruple power from
       the appropriate type of node (i.e. the abilities are fully cumulative). And
       with sorcery mastery, conjurer, and lots of sorcery books it is possible to
       get sorcery summons for about 1/2 cost, this works for other realms too I
       think. (Except there is no life or death mastery. :( )
                                   [jrk3g@darwin.clas.Virginia.EDU (Jeffrey Robert King)]



     --------------------------------------------------------------------------------
     7.4) Life, Nature, Node Mastery
     --------------------------------------------------------------------------------

       Personally I like LLLLNNNNCS Node Mastery.  It gives you a wide range of
       spells, maximum, and enough researchable spells that most of the useful
       common and uncommon spells will be available to be researched.  Plus, the
       wide range of spellbooks ensures that most non-death wizards will at least
       be somewhat polite to you.          [lewchuk@cs.ualberta.ca (Michael Lewchuk)]



     --------------------------------------------------------------------------------
     7.5) Life On Myrror
     --------------------------------------------------------------------------------

       Right now I'm playing a Myrran Wizard with all spell books in Life,
       with Draconians.  Usually there is only 1 wizard to compete with on
       Myrror, versus 3 on Arcanus.  If you have problems from wizards on the
       other plane cast Planar Seal, and build up an army.  Then invade the
       other plane through all the towers simultaneously.  Regarding Torin, once
       you get him, give him protective armor and invulnerability and you have
       a medieval TANK!              [shumburg@iplmail.orl.mmc.com (Stephen Humburg)]

       Buddy up Torin the Chosen with an Archangel for even more fun.  Since both of
       those units actually increase stats of ALL friendly units in battle, your
       army will be very very strong! [DS]



     --------------------------------------------------------------------------------
     7.6) Deathmaster Warlord
     --------------------------------------------------------------------------------

       My basic approach has been to use a Nine Book Deathmaster Warlord. With 3 or
       4 werewolf units supported by a couple of heroes for the conquering army, the
       game becomes easy (pre 1.3).  Yeah, there are a few moments of hard fought
       slaughter in the field on the second wizard's army, but the regeneration
       ability allows for such indiscriminate mayhem it starts to be a little hard
       to lose with some actual thought and avoidance of high powered node/tower
       fights until your heroes are well equipped and able to punt the Great Wyrms
       etc.
                                          [robert.trifts@canrem.com (Robert Trifts)]



     --------------------------------------------------------------------------------
     7.7) Rainbow, Warlord, Sagemaster, Nodemaster
     --------------------------------------------------------------------------------

       Well, now i'm working on hard/small/4, with Node Mastery, Sage Mastery,
       Warlord, Alchemy, and one of each book (i think). Race is Barbarians.  My
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     Berserkers with Adamantium weapons kick butt, going through wraiths and sky
     drakes as if they were paper dolls.
                              [umblazew@news.cc.umanitoba.ca (Dennis Andrew Blazewicz)]


   --------------------------------------------------------------------------------
   7.8) Archmage Chaosmaster
   --------------------------------------------------------------------------------


     I had a grand old time (and kicked some ass) with a wizard that was
     Charismatic, an Archmage, possessed Chaos Mastery and 8 Chaos Books, and
     started off with the High Men race.
                                        [Wizard of Many Ways <lmize1@gl.umbc.edu>]


   --------------------------------------------------------------------------------
   7.9) No Spell Books Runelord
   --------------------------------------------------------------------------------


     My best game (in terms of fun and winning) was on Impossible Level / Large /
     4 Opponents.  I chose the Merlin picture and named him something like
     Runelord.  Then I took NO spell books.  Its possible to do if you are careful
     in choosing your skills so as to be down to zero spell book picks.  I then
     went with Dwarves, built Golems, and killed every stinking thing that moved.
     I was researching the Spell of Mastery extremely early :>, not that it does
     you a lot of good.  That was probably the most fun MOM ever was!
                                          [Dobz@ix.netcom.com (Jeff Dobberpuhl)]

     Yea, the Famous charismatic myrran warlord, channeler alchemist.  I've
     done that, didn't have as much fun with it as the other guy did.  Pretty
     sure I played as trolls, went straight to the buildings for war trolls,
     piled up 9 of them, and never lost a battle.  But I like to throw spells,
     and I don't mean summoning circle/magic spirit.                          [DP]


   --------------------------------------------------------------------------------
   7.10) Buy Your Way To Victory
   --------------------------------------------------------------------------------


     Most abusive combination I've discovered: Fame, Charisma, Alchemy, Warlord,
     Life 5, Halflings.  This will ensure that you can buy your way to victory
     with Ultra-Elite mercenary troops.           [Brian Wade (FLEBO@AOL.COM), DC]


   --------------------------------------------------------------------------------
   7.11) Cheap heroes Fast
   --------------------------------------------------------------------------------


     Only 8 spell books (all in chaos), but both Charismatic AND Famous.  The
     idea was to rack up cheap heroes fast, and it worked.  For a while, all
     I needed were my heroes.  Only now that everybody wants to kill me (isn't
     charismatic supposed to help, BTW?) do I even need to raise an army at all!
                                        [ldm@sccs.swarthmore.edu (Ajacs the Confused)]


   --------------------------------------------------------------------------------
   7.12) Archmage Chaos Channeler
   --------------------------------------------------------------------------------


     I usually like picking the attributes that you cannot normally get over
     time.  I like to choose Archmage/Node Mastery/Channeler/1 Life/4 Chaos/
     1 Nature/1 Sorcery.  This combo makes the most of your mana power.  I like
     Life for the Healing spell.  Chaos is good for out and out destruction with
     Firestorm and you get Chaos Channels which does not cost any maintence
     and is permanent when cast on a unit.  I always did like having my Paladins
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      with breath weapon or flying or stone skin. Note that a Paladin with a
      breath weapon can attack flying opponents!

      I like Nature for the Web spell. Sorcery gives you Confusion when it works.
      Node Mastery gives you double the mana from all nodes. Very powerful when
      you start capturing Myrran nodes which normally generate double the mana of
      nodes on Arcanus. Channeling allows you to cast spells at normal mana cost.
      This is very handy when you have to cast spells on the opposite plane.
      Casting spells from Myrror to Arcanus cost triple and vice versa. As well,
      Channeling allows you to cast spells at node sites and any summoned creatures
      are maintained at half mana cost. Archmage is good for the +10 spell casting
      bonus most evident in the early game but is excellent for pumping up your
      spell-casting ability. As well, it is harder for other wizards to cancel
      your spells. Well worth the 1 pick to get this attribute.
                                              [mlee@thetis.royalroads.ca (Malcolm Lee)]

      7.13) Alchemist Node Master

      I like Alchemy/channeler/node master, plus 2 life and whatever else
      grabs me, with halflings being fun to play (slingers are nice and 3 food
      per farmer helps, the "lucky" attribute helps early too) without being
      too powerful.   With alchemy I set my magic bars to 0% mana, 30% research
      and 70% casting skill, using gold to make mana. With a high casting skill
      and no range penalty (channeler) distant combat is not so bad (and node
      mastery stops those spells fizzling in nodes).
                                              [tjc@ecs.soton.ac.uk (Tim Chown)]

      7.14) Charismatic Warlord of the Adamantium Slingers

      When I want to win, I play with alchemy, charisma, warlord, Myrran,
      and famous. I then take 2 life magic and one sorcery. I play halflings.

      Charisma keeps the computer fighting itself and lowers costs on the
      merchant stuff that the famous ability attracts. By starting on Myrror I
      can usually get a city by an adamantium mine. This gives my slingers plus
      two stones from (nearly) the start. An experienced slinger with adamantium
      weapons can kill even warlocks with one shot. (With other magical bonuses
      I've killed every creature I've run across with one shot.) Even creatures
      which are supposed to be immune to missile weapons die in hoards.

      The game gets short when nine slingers can kill nearly anything they
      run into. I find the enemy capitals and march a stack in paralyzing their
      units. I then have a nightblade (if I have one) kill all the loose stacks
      left around. (A stack of nine units will retreat from one nightblade.)
      Use the excess production for trade goods. (It gets boring managing
      20 - 30 cities.) Repeat until all opponents are dead.

      Not much to it really, just a lot of blood.

      I've not seen a game that lasted until I ran out of spells to learn.
      (With only three books this isn't a long time I guess.) (pre 1.3)
                              [jeff@mercury.interpath.net (Jefferson W Rosenbury -- CBC)]

      Ah, the famous charismatic myrran warlord again... but how does he get
      12 spell picks? As I said above, I think this works best with 3 life,
      instead of 2 life and 1 sorcery. Look at it this way, you have 2 life
      books, now which is best: one more life book which will give you either
      endurance or just cause to start and let you get the the super-nice life
      spells, or alchemy which will make your units slightly better attacking

    and increase your mana income, or 1 sorcery book which will give you...
    uh... what the heck DOES it give you? The potential to maybe learn some
    sorcery spells someday? I'd rather have endurance and the potential
    for crusade, than to have nothing and the potential for wind mastery.
    Ultra elite admantium-armed slingers shouldn't have to walk around at
    one step per turn, should they?   [DP]

    7.15) Champion Crusading Warlord

    No summoned creature beats a well equipped hero (hint: Artificer).

    Second hint: Heroism. Third hint: Warlord. Fourth hint: Crusade.

    Warlord will do far more for your ability to get and maintain powerful
    heroes than either Famous or Charismatic, or both together. And it boosts
    your normal units, too: champion Rangers are fun!

    Ultimate combo IMX: LLLLSSS Alchemy, Warlord, Artificer.
    (The Alchemy is for the normal units, and not having to worry about mana.)

    You will be better off if you can trade with other users: due to your low
    "concentration" of picks, you may have trouble getting rare/v.rare spells.
    In fact, it might be worthwhile to broaden your base instead, with say
    LLLSSCC, or LLLSSCN - using much spell trading to fill in the realms you
    only dabble in.

    Strategy: Get heroes, and keep them. Cast Heroism on them. (Also cast it
    on normal units - U.E's with magic weapons are no joke.) Most valuable
    spells = Summon Hero (obviously), Summon Champion (duh), Crusade.
    Life/Sorcery has all the defensive stuff, and if you choose to add a little
    bit of Chaos or Nature it will give you some offensive punch for combat
    support.   [jrk3g@darwin.clas.Virginia.EDU (Jeffrey Robert King)]

    Hello, Fellow Warlords. I agree with all you said. Now let me take it
    one step further ---> Warlord & Fighter Guilds & Crusade & Altar of Battle =
    All starting units start at Champion levels. You will have to go one step up
    to Armorer's Guild for special units like Paladins, but with this setup just
    turn on your slinger factory <champion level>. It is the optimum setup on
    Impossible level. Heaven help anyone if you get Mass Invisibility. A
    champion level slinger has 3hp + 4hit Lucky +5 base stones and no creature
    can kill an entire unit taking 2 attacks. Champion Pikemen and/or Barbarian
    Calvary are the Vikings of old Norse Legends.
                                        [spido@clark.net (DriveBy Billy)]

    7.16) The Trader   (from john.ewing@cnsw.com, John M. Ewing)

    My favorite pick is a little weird, but the game always plays
    differently and I find that variety is the spice of life. Here it is:

    1 book Life
    1 book Sorcery
    1 book Chaos
    1 book Nature
    Alchemy, Warlord, Famous, Charismatic, Artificer

    I sometimes swap the life book for death. I also swap Myrran for some
    of the retorts sometimes.

    The idea here is to trade for your spells! You are eligible to trade

for 80 % of all spells. Early in the game you trade Enchant Item and
Create Artifact for commons, uncommons, and sometimes a rare. Because
you are trading down, it tends to make the opponent think kindly of you
for a little while. You can trade the spells you just received from
this opponent to another and then come back again with new spells.
Being charismatic helps quite a bit here - Aura of Majesty can make a
nice supplement. Also pray for Theurgist opponents. In the middle
game, you can find yourself with quite a nice variety of spells for
combat - like Lightning Bolt, Heal, Raise Dead, Phantom Warriors,
Confusion, Crack's Call, Stone Skin, Holy Armor, Giant Strength, Flame
Blade. Sometimes you get lucky with and trade for a good rare like Doom
Bolt. Very Rares are even more rare when trading however, and you will
probably have to stomp an opponent's fortress to get their really good
spells.

Being a warlord gives you better units at the beginning, you can get
more fame to add to your 10 to begin with. Also, you can usually cast
Just Cause. The result is half way decent heroes start popping up at
your door and are cheaper because of charismatic. Pick the best cost
effective unit and supplement your hero pack. Some of the magic users
are more useful back at home base. Equip these heroes ASAP with halfway
decent weapons either purchased or enchanted.

Mana and gold flow are typical problems. Alchemist helps here and also
supplements armies with magical weapons. You will only have 4 mana a
turn at the start of the game from your books. This makes Elves, Dark
Elves, and Nomads a lot more attractive for starting races. High Men,
Dwarves, Orcs, Beast Men are decent as well. Gnolls, Klackons, Lizard
Men, Barbarians, Trolls are tougher to start with but I have nothing
against any of these races. With reduced mana, cracking an early node
or two is extra important. I usually don't bother with summoned
creatures unless I have a very specific need that they fit well.

If you play at Impossible level, you will most likely find nine more
spell books when you start cracking Myrran nodes.

No two games are ever the same. Trying to keep peace just long enough
to trade spells back and forth keeps the diplomacy aspect of the game
worthwhile.

7.17) Sorcerous Artificer

Take 5 sorcery books /2 and 2 of any thing else and runemaster + artificer.
You can then create many good artifacts.

The most awesome combination with 5 sorcery, runemaster, artificer, is to
create magic immunity / guardian wind on armor (with +4 movement), and
flight on an amulet (with another +3 movement). Then you have a hero that
can only be hit by rocks, can't have his immunity dispelled, who flies at 10
overland (or 9 in battle, another bug) (or walks if webbed, but still at 9).
One hero like that can take out almost any city and most ruins, and can
reach enemy fortresses before they can finish a bad spell.   [DP]

7.18) Triple Rainbow Node Blend

A combination I used to play a lot was 3/3/3 nodemaster alchemist, which let
me learn every possible spell in three realms (great for trading), get great
mana to build casting skill while using my gold to cast the spells. The
coolest thing about this game is, most of the great combinations of spells

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       require combining different realms of magic, rather than being combinations
       of spells from the same realm.  As you mentioned, berserk phantom beasts, or
       flying call lightning, or like I discovered, flying regenerating ghouls
       (or invisible regenerating ghouls).  If you're not limited to one realm, you
       can do stuff like raise volcano and change terrain to terraform the world, or
       lionheart/spell lock, regen with spell lock, mind storm with ghouls, mind
       storm then disintegrate the prayermaster, black prayer / confusion, wind walk
       with endurance, path finding on a night stalker, a flying lion-hearted hydra.
       To pick a single favorite color would be to choose that one color over NOT
       picking ONE.  I can't: I choose 'rainbow' if I have to give it a name.  My
       'favorite' is to always have a combination of colors available.         [DP]
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   -------------------------------------------------------------------------------
   7.19) Some Strange Combinations
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   Fun things to try in MoM:

           Lizardmen of Life (8+ spellbooks)
           Dwarves of Death
           Nomads of Nature
           Klackons of Chaos
           Svartalfs (Dark Elves) of Sorcery

           Draconian Double (4 in two magic types)
           Orc of all Trades (no more than two in any type, Artificer, Conjurer
             & Alchemy)

           Triple Mastery (Rune Master, Node Master, Sage Master)
           Mana Maniac (Alchemy, Channeler, Mana Focusing)

   Has anyone tried any of these, or anything similarly weird?  Anyone can win
   with halflings or high men and 11 life/sorcery books.  I'd be very interested
   in what _difficult_ combos people have tried.
                                         [jeff@steamer.clam.com (Jeff Darcy)]

   A while ago, I tried to come up with the worst possible combination to
   win with.  Here's my entry (though I didn't actually play it).  I dare
   anyone to come up with any stupider combination.  For that matter, I dare
   anyone to actually play this one at Impossible level, without cheating.

       4 death         (only a very few good spells at start)
       1 chaos         (gets you no spells at start, and no great ones)
       artificer       (almost worthless without runemaster and good books)
       mana focusing   (utterly ****-worthless **** under any circumstances)
       famous          (not worth two picks, unless with warlord+charismatic)
       infernal power  (not quite worth one pick, but costs two)
       Then play as LIZARDMEN.

   If you substitute 4 nature for the 4 death, you have to get rid of infernal
   power, which means you would have to take two more *useful* spell picks
   instead.  I'm sure 6 nature books would be better than just 4 death and a
   nearly useless double-pick, because you'd have a high chance of getting
   nature awareness, path finding, regen, and wyrms.  It would also allow you
   to enchant some *useful* abilities with artificer, unlike 4 death books
   which only give useless abilities.                                        [DP]
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   -------------------------------------------------------------------------------
   7.20) Other Combinations
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   Ah, I already told you about the 3/3/3/nodemaster/alchemist that I've played
   more times than any other combination. Others that I've done many times
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       (other than the 11 books options, of course) include: 3 life, 3 nature, 3
       sorcery, 1 chaos, nodemaster. This gives me the maximum possible spells
       learnable/tradeable, lets me take nodes easily and gain from them, and lets
       me combine the spells in a huge assortment of combinations. I also like
       1 chaos, 2 death, 3 sorcery, 4 nature, nodemaster. Same as before, but it
       gives me ghouls right away and a pretty good chance of getting flight and
       regen.

       9 X, X mastery, conjurer, where "X" is any of nature, sorcery, chaos. It's
       so nice to have a 60% reduction in casting and research cost of summoning
       spells! Phantom warriors for *4* mana!

       Famous charismatic myrran warlord, 3 life. Warlord + heroism = kick ass.
       Dwarf + admantium + stream of life + warlord + heroism = slaughter ass.
       Famous + charismatic = lots of heroes. Heroes + warlord + heroism = instant
       5th-level sages, armsmasters, legendaries, prayermasters, and casters!

       5 sorcery, 2 life, 2 chaos, artificer, runemaster: lets me quickly create
       super-swift invincible heroes (flying, magic immune, missile immune, speed
       10, +9 attack, all impervious to dispel). I can be using the item I'm going
       to bust, while I'm working on the replacement for it, and pick myself up by
       the bootstraps. The first hero gets un-dispellable flight for 63 points, NO
       upkeep cost!   [DP]

    7.21) Warlord Generalist

       My normal build is Warlord, Alchemist, Node Mastery, LLCNNSS. +1 troops with
       magic weapons from the start. Plenteous power from nodes, which are easier to
       take, because I can use magic in them. Trade with most wizards. Flexible
       cash/mana management. I take Guardian Spirit, Web, and Confusion as my
       optional spells. And then I pretty much have to rely on my troops.
                                                                        [MadKaugh]

    ==
    8) Spoiler (Super) Strategies
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       These are strategies so powerful that they may make the game too easy, even
       on impossible level. Or at least possible to win on impossible level.

       Most revolve around picking 11 spell books in one color, which lets you pick
       2 Uncommon and 1 Rare spell. Most the 11 books strategies use that 1 Rare
       spell to great effect, usually summoning a very powerful unit as quickly as
       possible.

       To get your super unit as soon as possible, do some fine tuning: Allocate
       all your mana to mana storage (no research, no skill improvement until you
       get your super unit). Start with High Elves to get more mana per turn. As
       gold (taxes) comes in, convert gold to mana. Keep your two starting units at
       home to quell unrest, and crank the tax rate up as high as you can without
       getting rebels. If your starting city doesn't at least have a gold, or
       mithril deposit, you might want to quit out of the game and start over, in
       hopes of getting a deposit.

       Alternatively... To get your super unit "as soon as possible" conjure three
       magic spirits first, and send them around hitting on ruins to find free gold
       and mana just laying around for the taking! The mana spent getting them
       will almost always be repaid double in gold and mana, and as for the time,
       you're going to be spending most of your time desperate for more mana, NOT
       casting the spell, so it won't actually slow you down at all to take a few
       turns at the start for the spirits. Additionally, when you get your super

      unit, you will already have a large part of the world mapped and know just
      where to send it, instead of wasting mega-upkeep on mapping. And also, the
      spirits might even bust up a few enemy wizard's outposts or spot a marauder
      in time to do something about it.   [DP]

      While you're conjuring the super unit, you should keep your mana in the form
      of gold, so you can convert it to mana in an emergency like defending your
      fortress against a marauder. Only when you have enough to complete the
      spell in a turn or two should you convert gold to mana.   [DP]

      Even with fine tuning it will take many turns to get your super unit, but
      the 40% casting discount you get with 11 books will help. Just keep pressing
      Next Turn, and keep thinking about all the destruction you will do, once you
      get your super unit. Your super unit may not be strong enough to take out
      tough nodes, but it should be strong enough to take over most lairs, nearly
      all neutral cities, lightly defended cities belonging to other wizards, and
      some nodes. Use the wealth and power from your super unit's conquests to
      take over the rest of the world.

      8.1) 11 Death books - Wraiths or Shadow Demons

      For your rare spell, Wraiths. For uncommon I like Shadow Demons and Black
      Prayer. Summon Wraiths first. Wraiths are great for several reasons.
      Wraiths fly, move at 2, and have Weapon Immunity. Their -3 Life Stealing
      attack creates undead defenders for the cities you capture. The undead do
      not need food or money maintenance. Don't keep around undead summoned
      creatures because they cost double mana maintenance. Maybe you have a fun
      suicide mission for them. Note: Use Black Prayer to lower the enemy units'
      resistance, making the Wraith's life stealing attack even more effective.
      Wraiths can be hurt by magic ranged attack, magic weapons (but not normal
      weapons) by tougher summoned creatures, and spells like Fire Bolt. But, when
      your Wraiths get hurt, just go steal life from some low resistance target.

      This is probably the easiest (and most evil) 11 book strategy. Wraiths in
      most situations are harder to kill than Gorgons or Torin.
                                                    [rwatkins@crl.com (Ronald Watkins)]

      But Night Stalkers are far better than Shadow Demons: 1/7th the upkeep, move
      faster (most places), can safely explore almost all ruins, defend cities,
      stop marauders, even take a few cities or ruins. But you'll be too busy
      summoning more wraiths to summon any Night Stalkers or Shadow Demons anyway.
                                                                           [DP]

      8.2) 11 Life books - Torin

      For your Rare spell, choose Incarnation. For your uncommon spells you
      will probably want True Sight and maybe Planar Shift or Prayer or Raise Dead.
      Summon Torin The Chosen. Beef him up with Heroism, Lion Heart, Holy Weapon,
      Holy Armor, and Invulnerability once you research it. March him around the
      board taking over everything.   [Many people ...]

      Incarnation: absolutely. True sight: maybe, it lets him fight off those
      phantoms, but prayer is useful in more places. Third spell: planar TRAVEL,
      absolutely. He can almost always get places faster if he gets to choose
      whether to move on Arcanus through the mountains, or on Myrror in grasslands
      or enchanted roads, then come back to Arcanus to take out the neutral city.
      It'll cost you upkeep, but won't take up any more of your overland casting
      time like plane shift would. It also almost doubles his mapping ability,
      and "breaks the myrror" so you can be offered better mercenaries and trade

       spells with more wizards.   [DP]

       You have to be very careful not to lose Torin. In particular, watch out for
       wizards with Nature books (Cracks Call).
                            [tommi@rama.informatik.rwth-aachen.de (Thomas Stockheim)]

       In theory, you should be able to summon him again, with no loss in
       experience, just spell casting time. I've never actually done it, in
       years of playing, but that's what it *says*.   [DP]

    8.3) 11 Life books - Stream Of Life

       For your rare spell select Stream of Life. For uncommon, maybe Prayer and
       Raise Dead. Cast the life spell STREAM OF LIFE on all your cities, this
       doubles growth rate, causes all units to heal completely each turn, plus
       unrest disappears. This means you can set your tax rate to the maximum, and
       put ALL your mana into improving your casting skill, and use your alchemy to
       buy more mana each turn.

       This strategy is a little tricky to get off the ground. Stream of Life will
       cost 8 in maintenance per city. If you bump up the tax rate, it goes up for
       every city, so you need Stream Of Life in every city. It will take 16 gold
       per turn to convert to mana for maintenance. Even with a tax rate of 4,
       you will need a population of 4 just to break even. But, once you get your
       population up, you will be rolling in money/mana. Since Stream of Life
       doubles the growth rate, that won't be long.
                                       [BLJ, cptstern@Cyberquest.com (CaptStern)]

    8.4) 11 Sorcery books - Flying Warships

       You will need a race that creates warships. Create a flying, invisible,
       spell locked warship. Magic Immunity and Wind Mastery will help to. In
       terms of taking on passengers, Wind Walking may be better than flying. This
       isn't an instant strategy - it takes time to build up to a Warship. Flying
       Warships are very tough, but not unstoppable. A recruit level warship only
       has an attack of 10, and that is not effective against 9 or more shields.
       Sky Drakes slaughter flying warships (even if invisible). Shadow Demons are
       very tough to kill (because each shot you don't do much damage, and they
       regenerate).   [wagnere@Informatik.TU-Muenchen.DE (Erwin Wagner), BLJ]

       And therein lies the catch: to create a maritime guild will take you FAR
       longer than any other strategy in the list, even if you bypass optional
       buildings like farmer's market and go straight for the essentials. And
       the maintenance on those buildings will be heavy. This is a good thing
       to do in the mid-game, but hardly counts as a "spoiler" strategy.   [DP]

       Actually, Flying Invisible heros or normal units with a range attack make the
       game very easy. Also, Invisibility has most of the benefits of missile
       immunity and magic immunity. It also confers -1 to hit on opponents.
                                       [BLJ, rainbow@apxws48.ih.att.com (Rob Buchner)]

    8.5) 11 Nature books - Gorgons

       Summon Gorgons. Before v1.3 you could win quickly with this strategy. One
       report of finishing off the other wizards by 1408. With v1.3, it won't be
       that easy. The other wizards expand much more quickly now, and by the time

            you have finished off 1 or 2, the others will probably be sending hoards of
            Shadow Demons or even groups of Gorgons at you. Still, if you stay alive
            long enough to get your Gorgons, they can do a lot. Once you get
            Regeneration and/or Call Lightning, the tide should turn in your favor.
            Unfortunately, most of the common Nature spells won't be much help at keeping
            you alive long enough to research the more powerful ones. Nature is perhaps
            the hardest 11 book strategy.
                                              [BLJ, rainbow@apxws48.ih.att.com (Rob Buchner)
                                               schafer@walleye.network.com (Martin Schafer)]

            It would be, with an expensive unit to summon and maintain like gorgons,
            that have no way to speed them up in overland movement. My strategy of
            using basilisks instead, with path finding and water walking (and resist
            elements for taking on sprites, stone skin and giant strength for good
            measure) is cheaper to cast in total, gets you started collecting gold and
            mana a lot sooner, takes less maintenance, moves twice as fast on the map,
            AND leaves you with a free rare spell of your choice, Gaia's Blessing,
            perhaps. Or Gorgons, to use *later*, when you can afford the maintenance
            and use your basilisk to keep the gorgons moving faster. Yes, basilisks
            can't take on quite as tough of critters that gorgons can, but when you can
            take a city with 10 damage on a basilisk or 6 damage on a gorgon, then sit 5
            turns or 3 turns to get it back, the basilisk will be cheaper.   [DP]

            8.6) 11 Chaos books - Chaos Spawn

            Another, theoretical possibility: An Efreet. This guy flies at 3, 9 magical
            range attack, +2 to hit, Fire Immunity. 20 Chaos casting skill - he can
            summon a Fire Elemental to help him out. One problem - 3 shields. As yet,
            no story of someone winning with this.   [BLJ]

            You can win with the Chaos Spawn strategy. No basic normal unit can withstand
            you. Early in the game nothing can stop you. You can make a lot of progress
            and build a good base. You can even take out some towers, nodes, ruins. There
            was only one problem. They move at a rate of 1 which is slow for exploring,
            finding, and defeating all 4 wizards. The last two remaining wizards were
            able to easily kill my Chaos Spawn. It amazes me how fast other wizards are
            able to learn very rare spells. They even re-took many of my captured cities
            before I stemmed the tide. Fortunately I was able to augment my armies with
            regenerating Hydras. Eventually I won with Great Drakes, Call the Void,
            Magic Vortex, and Chaos Rift. I rate this strategy a little better than
            Gorgons and nature books. Chaos Spawn are not sufficient in themselves to
            win, you need to survive until the later stages (readily doable) before
            cleaning up. Also, I'm unable to translate playing chaos magic into a high
            score. You use up a lot of mana which otherwise could go into research. You
            do a lot of destruction to cities which effects your production rates.
                                             [rainbow@apxws48.ih.att.com (Rob Buchner)]

            Uh... slingers, shamans, dark elves, bowmen, sprites, basilisks, shadow
            demons, centaurs, night stalkers (both gazes happen at once), even TROLLS
            fer cripesake. Chaos spawn are worse than shadow demons for being slow,
            weak, and vulnerable. Have you *ever* gone into a chaos node, seen chaos
            spawn, and not slaughtered them without taking damage? They are nothing but
            floating pin cushions. Granted, if they ever manage to get to a neutral
            city with just spearmen or swordsmen in it, they'll take it, but there's
            a much better way.   [DP]

            Chimeras fly twice as fast, their fire breath is as effective as the doom
            gaze of the spawn, they have far more hits, more defense, they're a LOT
            cheaper to summon and a little cheaper in maintenance, AND they leave you
            with a free rare spell! For the price of two chaos spawn flying at speed
            of 1, you can have three chimeras flying at 2 and drop a Flamestrike to
            help them out as needed (after pumping spell skill, I admit). Or you can

take Chaos Rift as the rare spell, and when you find a neutral city with
slingers or shamans that would kill your chimera, drop a rift on their heads
and come back later when the city is empty! Do the same to enemy wizards
LONG before they learn Disenchant Area, and waltz into their capitals at
your leisure! (The survivors of the rift won't be able to take out a good
healthy chimera, for a long time.) Of the aforementioned units, only shadow
demons and trolls can withstand a chaos rift, but once it's been there long,
the city will be producing only spearmen. It's especially fun against a
wizard who likes to summon a lot of ghouls -- you'll see a stream of useless
remnants of ghouls come dribbling out of his capital.   [DP]

8.7) Free Sky Drakes (theoretical)

Take 9 Sorcery books. (Pick all the common spells except Resist Magic and
Dispel Magic True, since they have the lowest research cost.) Take Sorcery
Mastery and Conjurer. Also pick node power High. Go to Myrror and conquer
Sorcery nodes until you have 13 Sorcery books. (To guarantee picking up
Sorcery books, you may have to save the game before beating a tough Sorcery
node, and then replay the battle if you don't get a book.) With 13 Sorcery
books, you get a 60% Sorcery Spell discount, 15% discount for Sorcery
Mastery, and 25% Discount for Conjurer discount equals:

100% fantastic creature summoning discount--they are ***FREE***.

And, now that you can summon them for free, what would be a good creature to
get? Sky Drakes. Go ahead, summon a half dozen of them. You still have to
pay maintenance, but just disband them when you don't need them. What do you
care - you can resummon them for free.

How do you get to Myrror and how do you take over those tough, high treasure
Sorcery nodes? That is left as an exercise for the reader. You have to work
pretty hard to get this "easy game". However, you will start with an 80%
discount on summoned Sorcery creatures. You can get Phantom Warriors for
only 2 mana. Once you research them, Phantom Beasts for 7, Air Elementals
for 10. Those cheap combat summons should be pretty helpful.

I would really love to hear the story of someone making this work. Dan Hite
was able to verify FREE Sky Drakes by using an editor to give himself
additional Sorcery books.   [danhite@aol.com (Dan Hite), BLJ]

Nope, 9 books give you 20% off, conjurer is 25% off, sorcery mastery is
15% off, it comes to 60% discount, not 80%. I know, as I said, I've played
this configuration several times. Phantom warriors cost 4 to start, not 2.
If this worked, you could do it to get free great wyrms, or hydras, too.
(Except, without a flight spell, or a wind walker to carry them, hydras are
too blasted slow to be much good.)   [DP]

8.8) Blessed Enduring Invulnerable Guardian Spirits [DP]

Now I know, Guardian Spirits sound like more of a farce than a force to be
reckoned with, but with Invulnerability, plus Prayer or True Light, plus an
occasional Healing, they allowed me to defeat ALL FOUR enemy wizards, on
Impossible level, in just THREE YEARS! It is extremely difficult for hell
hounds, sprites, ghouls, halberdiers, even shamans and slingers, to harm an
Invulnerable unit. Spearmen can't possibly touch them. Summoning cost is
only 201 (counting the original spirit, plus Invulnerability, Endurance,
and Bless), then they move at 4 steps per turn on any map square, can't
be Webbed or Cracks Called, have very high resistance and a decent attack
strength (strong as a Fire Giant or Doom Bat!), walk through castle walls,

     and Plane Shift works on any map square. I took on a city with 6 ghouls:
     True Light, auto-fight, took a few hits damage. I took on seven hell hounds
     and some beastmen swordsmen: Prayer, auto-fight, NO harm taken! I took on a
     pile of halfling swordsmen and sprites, no problem! Final battle, high elf
     cavalry with magic weapons (via alchemist): threw a Prayer and let it go,
     stopped it once to throw healing, but probably would have won without it.
     Four up, four down, three years, game OVER!

     When I tried it a second time, it took a little longer (five years), because
     it took some time to find the last wizard, then it took three battles for my
     Guardian Spirit to kill the veteran War Mammoths he'd bought at some point.
     After just five years, I held 27 cities, had 45 fame, and four invulnerable
     spirits searched Myrror looking for the last wizard. Almost the same thing
     happened when I tried it a third time, and a fourth time, winning the game
     in five years both times. I'd say this counts as *THE* Spoiler Strategy.

     The spell sequence: Guardian Spirit, Endurance, Guardian Spirit, Endurance
     (begin mapping and planning where to attack first), Invulnerability,
     Invulnerability (now you have two deadly assassins, so take neutral cities
     and tear down armories for gold), Bless, Bless, Plane Shift (now you have
     one on each plane), Just Cause (and raise your tax rate to 2 and set all
     mana into casting skill), Summoning Circle (cheaper than another plane
     shift, and you have a city on Myrror, right?), Guardian Spirit, Endurance,
     Invulnerability, Bless, repeat last four until game over.

     I've never seen any other strategy that has ANY chance of defeating all four
     enemies this quickly. It takes you almost three years just to GET Torin,
     never mind moving him far enough to find all four enemy wizards, never mind
     taking out seven hell hounds or seven ghouls with him. Wraiths, Gorgons,
     and Chimeras are no faster, since they take just as long to summon and you
     have to take out a tower to get to the other plane.

     Compared to summoning the Chosen, Invulnerable Guardian Spirits are faster
     to summon, much faster on the map, much cheaper to maintain, and just as
     effective in battle against the enemies you're likely to fight in the early
     years. That is, if they're both able to kill, then Torin is overkill you
     don't need to pay for. And there are some encounters where an invulnerable
     unit easily wins, but Torin would LOSE. Besides, Invulnerability can save
     your weak cities from mauraders, while Torin can't possibly guard them all.

     ===
     9) Cheats
     ===

     Just remember: "Cheaters never prosper!" (See "*")

     These are ordered roughly from the least to the most outrageous fracturing of
     the spirit of the game. The first few aren't even "cheats", just little
     abuses of the way the game works.

     * Unless they use an editor to give all their cities prosperity.
                                          [rhondaa@boi.hp.com (Rhonda Wilson)]

     9.1) Save Before all Battles - If Outcome is Bad - Restore
     ----

     The Granddaddy of all cheats!!   [Origin precedes recorded history....]

     An extension of this would be... Turn 1, retake the turn until there's a mana
     short. Continue play, and if the mana short ever ends, reload the game.
     This completely eliminates the biggest advantage the enemy wizards have over
     you: with no mana, they can't summon massive legions of creatures to take all

        the neutral cities and nodes before you can get there. They also can't pump
        their skill and research as ridiculously fast. Concentrate on buildings that
        don't produce mana, over ones that do. Let the mana short end when you are
        ready to take over a lot of nodes. However, regardless of how often you
        reload, the mana short will end in about 20 turns.   [DP]

  9.2) Healing the undead

    Undead units are not supposed to heal... but they do if they can Regenerate.
    Cast Black Channels on any unit that has the Regeneration spell, or on any
    Troll unit, and you get an undead unit that heals. I've done many nasty
    things with armies of Undead, Ultra Elite, Troll Shamans. The problem is
    waiting for them to get to Ultra Elite before you cast Black Channels,
    because they never gain experience after you cast it.
                                   [icarus@twain.oit.umass.edu (DOUGLAS W HIGGINS)]

      BUG Trick: Armsmaster Heroes can net Undead units experience.

    IMO Not a cheat, nobody said the undead couldn't regenerate.   [BLJ]

  9.3) Exception to Planar Seal

    When planar seal is in effect, you can still get units to cross to the
    other plane if you have a city on the other plane. Move your summoning
    circle to the city in the other plane and use word of recall to bring
    the unit to the city with the summoning circle.   [Bill Soo, DC]

    Recall Hero works as well, but only for Heroes.

    IMO Not a cheat, just a limitation of Planar Seal.   [BLJ]

    Similar cute combination: planar seal is in effect, and you've never been to
    Myrror. How do you 'meet' the wizards over there, using nature and sorcery
    magic, so you can trade spells? Answer: Earth Lore, Floating Island! There
    is no other way, that I can think of, to defeat the seal.   [DP]

  9.4) Determine a Computer Player's Spell Skill

    If you use Spell Blast two turns in a row you can usually deduce your
    opponents' casting skill level. Another good use of Spell Blast is to check
    how far along an enemy casting Spell of Mastery is to help you decide when
    it is necessary to deal with it.   [danhite@aol.com (Dan Hite)]

    Note: To estimate the computer player's spell skill you can also add up the
    spells cast in combat.   [rainbow@apxws48.ih.att.com (Rob Buchner)]

    IMO Not a cheat, just an unusual way to figure something out.   [BLJ]

  9.5) Estimate Opponents Spell Knowledge

    Spying on an enemy by pretending to offer spell tribute and then escaping out
    of it ("forget it") apparently doesn't make them get pissed and stop wanting
    to talk. Therefore you can do it over and over and get a fair idea of what

     spells that you know they do or do not have.   [danhite@aol.com (Dan Hite)]

     IMO Not a cheat, just an unusual way to figure something out.   [BLJ]

   9.6) Invisible defenders throw off the computer...

     I think Nightblades are cool. An enemy wizard will attack your city with a
     large army but he can't see you. He is too stupid to cast anything that show
     invisibility (I forgot the spell). So press about 10 times done and he will
     retreat and you are victorious. Or click on auto. Nightblades make good
     defenders because they have intrinsic invisibility - it can't be dispelled.
     (No FAME)   [C.W.G.M.Enders@kub.nl (C. Enders)]

     IMO Not exactly a cheat. Also, if any of the computer's units have True
     Sight or Immunity to Illusions, this won't work.   [BLJ]

   9.6.A) Flying defenders throw off the computer, too

     I noticed, a while back, a way to get around being the truly hardcore random
     attacks you see on Impossible. I usually start with Draconians, and the first
     thing I build is a city wall. Here's why:

       Most of the things that attack are (admittedly powerful) melee units, with
       a smattering of range. With a city wall set up, you can block the entrance
       with a flying unit, then hit the Auto button. It will then say, you win the
       battle. When an enemy unit cannot move into the city or attack any of the
       units you control, it will sit there (Similar effect to the invisibilty
       cheat you mentioned). Make him tough enough to survive ranged barrages and
       nothing can get in. I mostly used this to deal with the tendency toward
       early marauding Earth Elementals I tended to see. The crux of it is,
       though, use a flying unit to block entrance to your city, and enemies won't
       try to attack, and you'll auto-win when the time is up.
                                                  [Masked Huzzah (Zack Eskins)]

   9.7) Get Out Of Battle Free (Retreat Without Losing Units)

     Free Retreat Cheat: If your units are faster than the enemy, you can get away
     with no chance of loss while retreating by running in circles until 'all
     units retreat exhausted'. Of course, it SHOULD be impossible for a faster
     unit to be caught while retreating from a slower one, but normally, it isn't.
     This won't work if the enemy still has ranged shots left, obviously. You can
     use the same dodge if you fly and they don't.

     Also, combine running in circles with the nature spell Call Lightning -
     they will eventually die of it, unless immune to magic.
                                 [jrk3g@darwin.clas.Virginia.EDU (Jeffrey Robert King)]

     Is this cheating? Well, like he said it should be impossible for a faster
     unit to be caught while retreating from a slower one.   [BLJ]

   9.8) Avoid The Wizard You Hate The Most

     If there is one wizard that you really hate to meet, play with a custom

     wizard, then select the picture of the wizard you hate. The computer will
     never pick that wizard as one of your opponents. (Note: I always pick Horus,
     not because I hate to meet him, but because it makes me so damn good looking.
     My little boy says - Dad, is that you? (He's impressed.)   [BLJ]

     9.9) Discount On Buildings

     Cheaper purchases. A Marketplace is worth 100, and if you try to buy it on
     the first turn, it will cost you 400. The way the games charges you is: If
     you have none of the gold coins filled in, the cost is 4x, if you have some
     coins filled, but less than 1/3 then the cost is 3x the unfilled coins. If
     around 1/3 of the coins are filled in, the cost is 2x. By buying cheaper
     items, and then using the change button, you can reduce your cost.

     Example: If you want a marketplace, change to spearmen and buy them. If you
     can't buy spearmen because your city can make them in one turn, try
     temporarily converting all your workers to farmers. You have no coins, so
     the cost is 4*15=60. (This is a beastman city, other races have other costs
     for spearmen.) Now change to swordsmen which cost 30. You are 1/3 filled
     in, so the cost is 2*15 = 30. Now change to library, cost 60. You are 1/3
     filled in, so the cost is 2*30=60. Now change to marketplace. You are more
     than 1/3 filled in, so the cost is 2*40=80. Total cost is 230, instead of
     400. You saved 170!
                                         [cptstern@Cyberquest.com (Capt Stern), BLJ]

     Is this cheating? What if you *really* need the money? Nobody every said
     you couldn't change your mind . . .   [BLJ]

     9.10) Recycle Artifacts For A Profit

     If you have runemaster AND artificer abilities, they are cumulative,
     allowing you to build artifacts for 37.5% of normal cost (3/8). You can
     then immediately break them on the anvil for 50% of normal cost, thus
     getting 1/3 more mana than you put in. Repeat as necessary.
                                 [jrk3g@darwin.clas.Virginia.EDU (Jeffrey Robert King)]

     Not! The ratio is 25%. Half off for artificer, 25% off for runemaster,
     total of 75% off. Since the item cost 1/4 the base price, and you can
     break it for 1/2 the base price, you gain in mana whatever your casting
     skill is. I don't think it's a cheat, just a bad flaw in game design.   [DP]

     This is documented in the MOM Official Strategy Guide, and they don't call
     it a cheat.   [Brian Wade (FLEBO@AOL.COM)]

     9.11) Better treasure through save/restore

     If you save game before a battle, fight the battle (win), and don't like the
     treasure you get, you can load the saved game, refight the battle, and you
     will usually get a different treasure.   [BLJ]

     9.12) Better heros through save/load repeat

     You can also save your game before summon hero or summon champion completes,

   and then if you don't like the hero you get, you can reload, and when the
   spell completes you will usually get a different hero.   [BLJ]

   Or, to compensate for the game cheating like a MF, you can reload every
   turn with your 20 thousand gold and 180 fame, until you actually GET a hero
   to send up against the six heroes they each already have. Cheating, but
   perfectly justifiable. Deciding *which* hero you get is cheating, and not
   justifiable. Killing off the ones you don't want, so they can't show up
   again, is not cheating, since you spent the gold and can do what you want
   with it.   [DP]

   9.13) Use Strategic Combat

   Strategic combat is resolved through a complex calculation comparing the
   strength of each side, and doesn't involve fighting at all. Some situations
   that are hopeless in actual fighting you can win in Strategic Combat. The
   only way to know if it will help is to give it a try. Note: I believe
   strategic combat assumes you cast spells equal to your spell skill in every
   strategic combat battle. So it is hard on your mama reserve.
                                                 [BLJ, MOM Official Strategy Guide]

   9.14) Artifacts With Spell Charges

   It is possible to make artifacts other than staves and wands that have
   spell charges. Start the artifact as a staff or a wand and select the
   spell charges you want. Then switch to the actually desired artifact
   without un-highlighting the desired spell charges. Select four powers as
   normal. When the artifact is finished, you'll have the four powers you
   selected, plus the spell charges. Neat, eh?
                                                 [Jeff (jeffrey729@aol.com), DC]

   You can also do this with staves and wands, simply by selecting the spell
   you want and number of charges, turning off that option, and picking the
   other four powers you want on it. It's not cheating unless you actually
   throw the spell from the item when you didn't have enough mana to do so.
   Definitely YAB, though.   [DP]

   9.15) Use Plane Shift To Get A Node Without A Fight

   Move a Magic Spirit or Guardian Spirit to the point on the opposite plane
   that corresponds to a node. Now cast Plane Shift on the spirit. You get a
   spirit on a node, and you can do a meld, without disturbing the inhabitants
   of the node.   [joshua@warren-wilson.edu (Joshua Whealton)]

   9.16) Super Powered Artifacts

   In the create artifact spell, give the artifact a very long name (maybe 40 or
   more keystrokes - but not too many). You get an artifact with a bunch of
   super powers, like maybe +67 attack.
                         [strategy@kom.auc.dk (Michael O. Akinde) and many others]

   And then, for no reason, the game crashed.   [BLJ]

9.17) Super Powered heroes

  When you name your hero, if you give them a very long name they will get
  super powers, just like super artifacts.
                                            [zou@cs.buffalo.edu (Zhen Zhong Zou)]

9.18) Change Computer Player Personalities

  In the main movement screen Type <alt>-P. This gives the computer wizards
  new, randomly selected personalities.   [BLJ, MOM Official Strategy Guide]

9.19) Instant Mana and Spell Skill

  Go to the "Magic" screen and Type <alt>-PWR. You get 100 spell skill
  and 10000 Mana reserve. So do all the other wizards.
                          [umblazew@news.cc.umanitoba.ca (Dennis Andrew Blazewicz)]

9.20) Reveal the whole map

  Go to the "Magic" screen and type <alt>-RVL. The maps of Myrror and
  Arcanus are completely revealed. The computer opponents may also get the new
  revealed maps.   [CLA@UTXVMS.CC.UTEXAS.EDU (SimTex)]

9.21) Preventing the Enemy From Attacking -- DS

  This strategy comes to us from Pieter Spronck:

  The cheat is as follows: if you attack an enemy unit which survives the
  battle, and don't save after that before you press the "End of turn" button,
  that enemy unit won't attack in the next round.

  Why is this useful? Well, suppose for instance that you are in the earlier
  stages of the game, and have just enough mana to cast one "Phantom Warriors"
  spell. You have a small town, defended by a single spearmen unit, close to a
  sorcery node. The node generates a group of four phantom warriors units
  which head towards your city. To prevent them from taking over the city, do
  the following: As soon as the enemy group is next to the city, wait until
  you are ready to press the "End of turn" button, then save the game and
  attack the phantom warriors with the defending spearmen. On the battle
  field, cast "Phantom Warriors", and attack the enemy with this unit. Keep
  the spearmen out of the battle. You will probably be able to take out one
  enemy unit. Then retreat. If the spearmen can't escape, reload and try
  again. If they can escape, they will end up in the city they were defending.
  Now don't save! Just press "End of turn". The enemy will patiently wait next
  to the city, and you can repeat this technique in the following turns,
  removing one enemy unit each turn.
                                          [P.Spronck@inter.NL.net, Pieter Spronck]

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    9.22) Every Other Cheat in Arcanus (Myrror too)
    -----------------------------------------------------------------------------

    from Dirk Pellett:

    1: (YAB) Using a hero multiple times in the same turn by recalling onto a
    space where a wind-walker is patrolling.  Then moving the wind-walker... :)

    2: (YAB) Moving an engineer out of a wind-walker's stack, moving it back,
    moving it out again... as many times as necessary to build one space with
    each of my engineers.

    3: (YAB) Moving part of a stack of engineers who were supposed to be working
    on a road, leaving one, and still getting the road in one turn.

    4: NOT a 'cheat' but something someone else probably would have listed here
    considering other things which were listed: you can page left in the book of
    spells to research, and see every spell in your spell book.  Ones you know
    will be in clear text, the ones you don't know but CAN research are in code.
    The code is very easy to break.  I can read the spells in moments now, and
    make a list of every spell I will someday be able to research.  When I get a
    new spell book, I can page through and find out exactly which new spells it
    added.  Once I have the list, I almost never trade for a spell I'll be able
    to research later anyway.

    5: Grey-area cheat: start the game over and over and over until you have a
    reasonable starting position.  Don't settle for a city in the desert with
    only a gold mine and a coal mine, get one with mithril, wild game or two,
    and coal or gems, then you can make a real start.  Make sure your starting
    city has trees and hills and is by the shore for a merchant's guild (if it's
    the race to build that).  If you really want to be picky, go see what your
    potential spells are, and restart if you don't like them.

    6: (YAB) If you're about to be attacked in a city you can't defend, save the
    game, send one unit out to attack the attackers, retreat, and take the turn
    without saving again.  The attackers will not move the next turn (unless you
    mess up and save, then have to restore, in which case they will move). This
    will give you one more turn *per available unit* to get some power up there
    to defend the city or pre-emptively strike the attackers.  If your city can
    produce a spearman every turn, the attackers will NEVER attack it.

    7: (YAB) You can't see invisible units in combat, but you can tell exactly
    where they are and how many of them there are by trying to move a long-range
    hero to every square and see which ones it says are not allowed.  (Throwing
    holy word or flamestrike gives you this info without cheating.)

    8: (YAB) So he threw Counter Magic, did he?  Want to wear it down fast?
    Throw Bless, Resist Magic, Resist Elements, or Weakness, which will take 5
    power off his spell.  If your spell worked, hit 'cancel' and throw it again,
    and again... taking 5 points off his Counter Magic each time, even though
    you never actually throw the spell.  If you're willing to risk the mana on
    a spell that might fail, a more powerful spell is more likely to work, so
    throw Haste or Berserk or a 50-point Lightning Bolt, cancel, and do it
    again.

    9: (YAB) Not satisfied with just a +1 or +5 defense bonus from Stone Skin
    or Iron Skin?  Throw one on the unit before combat, and one of them during
    combat, and get a +6.  Not cumulative when cast on the unit out of combat.

    10: (YAB) You can only throw Eldritch Weapon, Flame Blade, or Heroism on
    "normal" units, which excludes chaos channeled units -- IN COMBAT.  But if
    you throw it on the very same unit out of combat, there's no complaint.
    Same goes for Torin, who can't get Heroism in battle, only before.
```

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================================================================================
10) Advanced Topics
================================================================================
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   This section includes interesting discussions of advanced topics.


```
--------------------------------------------------------------------------------
10.1) Should I exchange spells with the other wizards?
--------------------------------------------------------------------------------
```

   Yes, it helps your score. I usually research the more advanced spells that
   will take awhile, and get all the "small" spells from trades. This is a must
   if you wish to max out your spells in a quick game (ending before 1430).
                                       [benton@malibu.sfu.ca (Brent James Benton)]

   Trading spells can be detrimental. Do NOT give that computer player Stream
   of Life! However, some spells seem worthless to the computer, like Enchant
   Item/Create Artifact, or color-specific spells that don't affect you (ex.
   Lifeforce if you're not playing Death), or Planar Seal (I'm usually happy
   when the computer casts this one). Too bad you can't trade the Spell of
   Mastery. It would be funny to give it to all your opponents the turn before
   you finish casting it ;-).   [dtebben@alumni.caltech.edu (Dirk Tebben)]

   Geez, that's one of the perfectly innocuous ones I'd be perfectly happy
   to hand over for a Giant Strength spell. The more time he wastes casting
   that spell, the less time throwing Earthquake or Chaos Rift or Corruption
   on me. The bigger his cities are when I take them, the more fame I get.
   And so what if his units are healed completely every turn, when I never
   leave him with any injured units anyway (only dead ones)?   [DP]

   On the other hand, trading Stream of Life for Crusade or Altar of Battle
   could be a good trade. I would never trade anything like Chaos Rift or
   Suppress Magic. I'll trade all my Summoning spells even Incarnation if I get
   a good spell in return like Nature's Wrath, Herbal Healing and/or
   Regeneration.
                                                 [spido@clark.net (DriveBy Billy)]

   Giving the computer arcane spells can't hurt much because it could research
   them eventually anyway. Also, Summon Champion is a good diplomatic overture
   because the high research cost impresses the computer. Also, I would much
   rather see the computer casting Summon Champion than Chaos Rift or many
   others.
                                            [BLJ, MOM Official Strategy Guide]

   If you're going to pound the other wizard repeatedly, which you should do to
   soak up 5 to 8 fame every time you take his capital, then you will learn all
   he knows (and can fit in your books) without giving him anything. But if he
   knows a spell you could really use now, and you can't possibly take him out
   (or if he knows 20 spells you don't, and you want that one), then by all
   means trade for it. But NEVER give him a good spell to use against you,
   like Cracks Call, Counter Magic, Doom Bolt, Call the Void, Disenchant Area,
   or Spell Blast. It's better to wait and live without the other spell than
   to give up one of those.   [DP]

   Excellent spells to trade away: Enchant Item, Create Artifact (one of the
   few advantages of being an artificer is the ability to trade for other
   arcane spells, so take advantage of it before they research those spells),
   Detect Magic, Change Terrain, Transmute, Bless (if you have no chaos books),
   True Light (if you have it, it can't hurt you), True Sight (if you have no
   invisible units), Healing (lets him waste a combat round instead of doing
   something dangerous to you), Wall of Stone, Wall of Fire, Holy Armor, Spell
   Lock, Vertigo, Hellvenly Light, Cloud of Shadow. There are LOTS of spells
   that won't hurt you much (if at all) to let him have.   [DP]

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   -------------------------------------------------------------------------------
   10.2) Be Ready To Destroy An Enemy Wizard Whenever Necessary
   -------------------------------------------------------------------------------

   If any enemy wizard is kicking your butt with nasty enchantments, perhaps you
   should put together your best stack and go to his tower and banish him.
                                                                         [BLJ]

   One of the main strategy points in my games is making sure I have the ability
   to quickly find and destroy any wizard should the need arise. That means
   devoting a lot of resources into building and maintaining and magically
   supporting a stack of units/heros which can move and effectively act on
   possibly short notice.  In other words I am ready when that spell of mastery
   starts.

   You can also help yourself by slowing down the most powerful wizard. Monitor
   the wizard comparison graphs and you know who you have to focus on. Take
   some/lots of preemptive action.    [rainbow@apxws48.ih.att.com (Rob Buchner)]


   -------------------------------------------------------------------------------
   10.3) Best Summoned Creatures
   -------------------------------------------------------------------------------

   David Ross Thompson (dthompsn@is.dal.ca) wrote:
   :     What do people think is the best creature that can be summoned? I
   : tend to think that it's the Sky Drake...the lightning attack and the
   : magic immunity make them killer units. Hydras are pretty good too,
   : though, as are Colossus (which I haven't yet seen in v1.3, come to think
   : of it). Great Wyrms aren't very cost effective (huge upkeep in mana) and
   : aren't of much use against flying units, and strangely both Demon Lords and
   : Archangels are pretty easy to kill.

   Archangels can cast Invulnerability on themselves, if you haven't already
   done so from the overland, they should do so.  Demon Lords have a life-steal
   attack - use it against low-resistance targets - and can summon demons. I
   don't find either of those easy to kill.  Also, you are neglecting the
   multi-figure summoned units, such as Gorgons and Chimeras, and the temporary
   units, such as Fire, Air and Earth Elementals. This being said, I agree that
   the Sky Drake is the best summoned creature, with the possible exception of
   Torin the Chosen, if he has a lot of experience and good magic items. But I
   think heroes weren't what you had in mind.
                                  [jrk3g@darwin.clas.Virginia.EDU (Jeffrey Robert King)]

   Assuming the question is about the raw, unadorned, creature, then it's
   Sky Drake for its magic immunity, flight, speed, and armor-piercing breath
   attack.  But I think a close second would be the Great Wyrm for its great
   defense, awesome hits, nasty poison attack, nasty melee attack, nasty hit
   bonus (+3), and that unbeatable combat speed.  Overland, with pathfinding,
   (very likely you know it if you can summon Wyrms) it moves at 6, faster than
   any other summoned unit.  Unadorned, these don't even rate: hydra, behemoth,
   colossus, demon lord, death knight, arch angel (though the +2 holy bonus is
   nice, you have to have other units to get much use from it), djinn.  Great
   Drake is probably 3rd place; despite being half as fast as the sky drake, it
   does a little more damage.

   Now, if you're talking the best creature adorned with spells native to its
   own realm, Archangel moves up: lionheart, righteousness, and invulnerability
   make a BIG difference, throw in charm of life and let it throw prayer, and
   you have a force to be reckoned with that has a GREAT flying speed of 5.
   Sky Drake gains guardian wind and invisibility, but the Wyrm gains iron
   skin and regeneration and several other nice bonuses, and becomes darn
   near unbeatable.  The great drake is no more dangerous with immolation than
   without it, and there are no good unit spells from death (barely worth the
```

trouble to mention, Death Knights with wraithform can't be webbed, but so
what). Adorned with spells of the realm, I'd give regenerating Great Wyrms
and invulnerable +7 hits Arch Angels the tie for 1st, barely edging out
invisible Sky Drakes.

If they had to fight each other, without help from the controlling wizards,
which would win? Arch Angels can see invisible and fly faster (endurance)
than Sky Drakes, thus eliminating the breath attack at least half the time.
With extra hits (charm of life, lionheart), and armor that stops 10% more
damage (prayer), +5 melee strength (holy bonus, lionheart) plus 2 damage off
every attack (invulnerability), I think an Arch Angel could easily destroy a
Sky Drake.

The Great Wyrm couldn't attack the Sky Drake at all, so it couldn't *force*
a win, but the Wyrm has the hits and armor to survive two attacks from the
Sky Drake, then zip away to regenerate the damage taken. The trick would be
moving around in a pattern that would keep the invisible Drake from getting
enough breath attacks to kill the Wyrm completely. Meanwhile, the Sky Drake
would get all beat up, and could only try that attack a couple times, so the
Sky Drake could never kill a Wyrm, either. The exact same result would hold
for Arch Angel against a Great Wyrm, except the Wyrm could trivially avoid
the visible Arch Angel while regenerating all damage it took. Despite all
the advantages of the Arch Angel, it couldn't possibly kill a regenerating
Great Wyrm. But neither could the Wyrm kill it, so it's a draw.

With help from the controlling wizard, casting only spells of the realm,
the Wyrm would kick ass on the webbed Drake and Arch Angel. Though it might
lose its Regeneration to a Dispel Magic True, and would have to beat past a
lot of Healing spells, it would still easily win both battles.   [DP]

10.4) Mana allocation - advantages of allocating zero to storage.

   One of the decisions you need to make in MOM that can have a profound affect
   on the course of the game is how you allocate your mana between mana storage
   (for casting spells), spell research, and spell skills.

   I personally have switched to a rather radical distribution. In particular,
   I am allocating NO, NONE, ZERO points toward mana storage. I do this
   even though I am NOT playing with the alchemy characteristic. If I need
   mana to cast spells or for maintenance (of spells or units) I convert gold.

   Once mana gets into the reserve, it cannot be spent on research or skill
   improvement. Since I have found that gold is a relatively plentiful
   resource and is easily converted, I prefer to do things this way. This
   allows the fastest possible increase in spells researched and skill
   gained.

   If, in some future version of the game, gold gets harder to come by,
   I might have to rethink this strategy.   [David Chaloux, DC]

   I would agree with Dave. I allocate zero mana to the reserve as well.
   In addition, I also micro manage the amount of mana I put into research.
   That is, I try to adjust the research amount such that the cost of the
   spell you are researching is an exact multiple. For instance, if the
   spell I'm researching costs 700 rps and my research setting is 300 rps,
   then it will take 3 turns to research. But 3 turns at 300 is 900 rps so
   you lose 200 points to wastage. Instead, I'll try to adjust it to either
   350 rps (and get the spell in 2 turns) or reduce it to 175 (and get it
   in 4 turns). Usually, the incremental bar won't let you get exactly what
   you need but you can reduce wastage by a large amount. In addition,
   I always check the amount whenever I capture (or lose) a node or build
   a source of mana since these events will change the mana allocation.

```
      BTW: This strategy is also used by each city when constructing things, excess
      workers, who do not contribute to getting a particular item out faster are
      converted into farmers. At least then, their output of food can be converted
      into gold.                                                        [Bill Soo, DC]


      --------------------------------------------------------------------------------
      10.5) List of known bugs (in MOM v1.31)
      --------------------------------------------------------------------------------

      In general, only bugs still in the latest version of MOM (1.31) will be
      listed here.  v1.31 is a major improvement over previous versions, and if you
      don't have it - get it!  To confirm you are running MOM 1.31 - click on the
      Game menu button.  You should see 1.31 in small print at the bottom of the
      Save/Load screen.  If you don't you see any print at the bottom, you aren't
      running 1.31.

      As the number of bugs has piled up, I've decided to try to limit this list to
      bugs so common that multiple people have reported them.  That way the list is
      better at warning you about what to watch out for, and contains fewer rare
      problems that many people will never encounter.                          [BLJ]

      Despite that, I believe a comprehensive BUG LIST can be beneficial. For one
      thing, it gives you a good place to see if your problem is unique to you.
      For another, you can also find BUGS that benefit the player, and thus,
      exploit them.                                                            [DS]

      A) !#$!?@*!! Crashes

      Game crashes in a variety of ways, typically after hours of play.  Solution:
      Save the game a lot.  Many times it won't crash when you replay.  If it does
      crash when you replay, you might try: using an even earlier save, if you have
      one, or replaying with something different such as: turning sound on/off,
      turning animations on/off, playing a different sequence of attacks,
      disbanding some of your units, destroying some computer units, etc.

      On the other hand, some people also claim that MOM 1.31 is very stable and
      never crashes.  Experience seems to suggest that the frequency of MOM crashes
      is affected by:
          1. The amount of RAM in your machine.  4MB systems typically crashes more
             often than 8MB or 16MB systems.
          2. Game difficulty and land size:  HARD/IMPOSSIBLE games on LARGE land
             mass are more likely to crash, because computer players generate
             hundreds of units.
          3. Length of each game session: If you play for hours without reloading
             from saved files, you are more likely to suffer crashes compare to
             those people who save/reload (i.e.  cheat) a lot.  Life is not fair...
                                   [ncl@philabs.philips.com (Nai-Chi Lee) and others]

      Throwing Call Lightning in combat corrupts memory, makes the game unstable.
                                                                                [DP]

      Throwing Animate Dead when there are more than about 6 units dead will
      immediately crash the game.  Throwing Animate Dead *AT ALL* is a sure
      way to screw things so it will probably crash later.  Even if it doesn't
      crash, it can screw up lots of other things.  For example, I used to know
      Floating Island (and I have some of them still around to prove it), but
      after casting Animate Dead, I didn't know Floating Island anymore.  The
      workaround is to ALWAYS exit the game completely after any battle in
      which you cast Animate Dead -- and don't save it before exiting, until
      you check your spells to see if you lost anything important.             [DP]

      Capturing the enemy's fortress, getting the spell you were researching, and
      going to look at the magic page.  *BAM*
```

Throwing Raise Dead doesn't just make the display screwy, it makes the game
unstable, frequently causing various forms of crashes later.

Going to look at the armies page, moving the mouse over a hero who somehow
got scrozzled to be off the map somewhere, *BAM*

Throwing too many Magic Vortexes in the same battle makes the game unstable.
(The number is probably between four and eight. Spell-casting heroes help.)

Enemy drops a volcano on the only forest square next to a city that had been
building a sawmill, you go look at the city, *BAM*.

Throw a change terrain on the only hills next to a city that had been
working on a miner's guild, go look at the city, *BAM*.   [DP]

Press F11. *BAM*   [DP]

B) Game Crashes When You Capture Banished Wizards Last City If It Is An
   Outpost

Ran into a bug in the latest version of MOM. I had Horus reduced to a single
outpost. It was the last settlement that he had. He had no troops in the
outpost and so I just walked my Paladin into it expecting a victory parade.
Instead, the game just hung on me. Luckily, I had saved the game before that
point. Eventually, I had to wait until the outpost became a hamlet and then
I could take it and could officially defeat Horus.
                                    [Malcolm Lee <mlee@thetis.royalroads.ca>]

C) Super Powered Galleys

Sometimes all your Galleys turn into super mutants with invisibility, spell
casting, regeneration, flight, and many other properties. This bug is
similar to its lesser-known cousin: the super mutant catapults bug in
version 1.2. If you ignore this problem and continue to play, other units
(including heros) may also start to mutate, and your game will eventually
crash. Solution: save immediately, quit, and reload the game. This should
bring everything back to normal for a while. However, sometimes you may have
to dismiss all galleys in order to proceed.
                                    [ncl@philabs.philips.com (Nai-Chi Lee)]

Part of "unstable". I'm pretty sure this is the Call Lightning bug, but it
might be the Animate Dead bug or the Raise Dead bug instead. The Swordsman
hero that can summon demons and build roads is probably related to this, as
is the one where Draconian Magicians fly at 86.5, and the one where you find
"War Bea" creatures and "en" units your city can build (when the pointer to
"Spearmen" gets corrupted).   [DP]

D) Undefended Hamlet Razed If You Attack It (Fixed in v1.31.)

If you take over an ungarrisoned hamlet with only 1 population, the city is
always razed (and you lose 1 fame). Solution: wait until you see an army in
the city, then invade. Now fixed.   [yun@Glue.umd.edu (Yun Choi)]

E) Dispelling Guardian Wind Doesn't Remove Missile Immunity

Computer players appear to still have missile immunity from guardian wind,
even after guardian wind is dispelled. You don't see it in their stats, but
missile attacks never hit them.   [spido@clark.net (DriveBy Billy)]

F) Chaos Channels Flight Doesn't Work Right

I've also noticed that flight type spells are fickle. Chaos Channel flight
doesn't allow normal units to engage flying creatures, but normal non-flying
creatures can't engage CC Flying units either . . . sort of a Semi-Flight??

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                 ** TBD: Reproduce in MOM v1.31 **        [cptstern@Cyberquest.com (Capt Stern)]

                 Yea, if you move a CC flying unit up adjacent to an enemy, and just say
                 "done done done..." the enemy will beat itself up attacking the CC'd unit
                 without doing any damage.  Great way to wipe out great wyrms (this is a
                 cheat).  And it isn't just Chaos Channel flight; the same effect can happen
                 with a unit under a Flight spell, too.  It isn't consistent, though.    [DP]

                 G) Raise Dead Brings Passengers Into The Fight

                 Perhaps not a bug, but an unusual feature.  Normally, transported troops can
                 not fight in naval battles.  I was fighting a war on Myrror when I saw two
                 Triremes loaded with Dark Elf Priests approaching.  Good, I thought, just
                 sink those triremes with my Draconian Bowmen and those Priests will be
                 shark-food.  But the very first spell enemy wizard cast was "Raise Dead" -
                 which brought his Priests into the battle!  I have not yet tried to exploit
                 this bug/feature myself.            [ncl@philabs.philips.com (Nai-Chi Lee)]

                 H) Gold Overflow

                 Normally, when you allocate more people as farmers in a city, you get more
                 food and less gold.  However, for a super-rich city (large, fully developed,
                 with prosperity/inspiration cast, set to Trade Goods), allocating more
                 farmers may get you more food and *more* gold.  Looks like some integer
                 overflow error has occurred internally.  Note that in earlier versions of MOM
                 (v1.0 - 1.2) this bug was worse: once the gold income from a city exceeds
                 255, it warps back to zero, so you end up losing lots of money if you
                 over-enchant a rich city.            [ncl@philabs.philips.com (Nai-Chi Lee)]

                 NOT a bug.

                 You get paid for the excess food, like the doc says, dude.  There's a limit
                 on how much gold the city can give, 255 I believe, and out of that it pays
                 for its buildings and sends the rest in as taxes.  If it's doing trade goods
                 or it's a dwarven city with Prosperity or some real good mines, or a high
                 tax rate, it can easily exceed the 255 cap on income.  In that case, you can
                 make a higher gold total anyway, by making them all farmers.  The food will
                 be sold for money at a 2/1 ratio.  Not a bug, just dumb that it doesn't go
                 into the granary and let you dip below zero the next turn so you don't have
                 to micro-manage the food totals.                                       [DP]

                 I) Experience Help Text Wrong When You Have "warlord" or "Crusade spell".

                 Help text describing unit levels is not correct if you have "warlord" or
                 "Crusade".  This is because the help text is always the same, but the
                 experience needed for the next level changes when you have "warlord" or
                 "Crusade".  Solution: use the manual, remember warlord and crusade each give
                 you one more level than is "normal" for a given amount of experience.

                 J) Torin May Have "Arcane Power", But It Is Useless

                 Torin and other heros that do not have ranged magic attack can get "Arcane
                 Power" even though it does them no good.
                                     [jrk3g@darwin.clas.Virginia.EDU (Jeffrey Robert King)]

                 K) Engineer Pops Back To Wrong Plane

                 This is the old pop-through-the-planes bug, an engineer moves through tower
                 to Myrror, next turn he's told to start building a road towards my halfling
                 colony (you know, the one over by the adamantium...) anyway, the following
                 turn our engineer appears, very confused, in the ocean back on Arcanus,
                 directly "under" his Myrran coordinates. (fortunately he was able to swim
                 back to shore, and is now recovering nicely thanks to lots of herb tea.)
                                         [fudenber@fas.harvard.edu (Drew Fudenberg)]
```

I like this bug very much. It allows you to build "bridges" over the ocean,
which even other ground units can use. Haven't tried ships on roads, yet!
                                    [wagnere@Informatik.TU-Muenchen.DE (Erwin Wagner)]

Any time a unit is set to travel a path that stops temporarily on a tower,
it will continue on the wrong plane if you happen to be on that plane when
the unit is moved. Solution: always make sure your movement paths don't
go through a tower.

If you mean the engineer builds the road on the wrong plane, not the one he
was on when you told him to build, that's because he builds the road on the
plane he's on when he gets to move -- which depends on the order you move
the units. Highly annoying bug.   [DP]

L) Max of 1000 units allowed, Computer Players Can Get Practically All Of
   Them

There are only 1000 units allowed in the game, and CP wizards and neutral
cities may have a lot of units. You can run into the "Max # of units
exceeded" message when you have just a few units. While not a bug per se, it
isn't nice. Solution - go kill some CP units.
   [marius@noc.tor.hookup.net (Marius Wejman), and cgwalan@aol.com (CGW Alan)]

M) Computer Turns Can Take A Long Time

Several people have reported MOM v1.31 getting slow - the computer's turn
taking 30 seconds to a minute. When you think about the computer doing
strategy, movement, and at times combat for almost 1000 CP units, I'm
surprised it doesn't take longer. On the other hand, often on Impossible,
the computer turns seem oddly slow, even in the first 10-20 turns.

Note: Some people never see this problem.   [BLJ]

N) Dispelling Flight Over Water

If you have a hero with Flight, and you want to dispel flight because now the
hero has an artifact with flight, and that hero is over water, wait until the
hero is over land. If you turn off flight over water the hero dies (drowns)
even though the artifact should allow them to fly.
                                    [cfb4@po.CWRU.Edu (Christopher F. Byler)]

I have never seen a unit actually drown, even when I deliberately leave it
hanging over the ocean and fly away with my wind walker. THAT's the bug,
as far as I can see: drowning is impossible. (I tried to get rid of heroes
this way, when I no longer wanted them, and it didn't work.) You can kill
a flying unit over water, and if Zombie Mastery gives you zombies, they're
stuck there, unable to walk, but they don't drown. (And I find it very
strange that a wooden ship turns into zombies when you kill the crew.)   [DP]

O) Gaia's Blessing Makes A Chaos Node Look Like Hills

Gaia's Blessing turns <ALL> Volcanos into verdant hills over time even Chaos
Nodes. I have two in a saved game. The square still has Chaos Node
properties, but it looks like hills.   [spido@clark.net (DriveBy Billy)]

That's not a bug: it *IS* hills, and gives all the food and production for
being hills that it is supposed to. Does just what the spell says it does:
turns volcanoes into hills, even if they're chaos nodes! I think it's neat.
                                                                        [DP]

P) Suppress Magic fizzles Lo Pans spell of Return, sort of

BUT he is in the game in SPIRIT form but no tower and no restored Face gem.
I know since if you attack any of his forces he casts magic against you. I

am going to forward this one to MPS. I don't think they intended suppress
magic to fizzle a SOR. I have a save game. [spido@clark.net (DriveBy Billy)]

Q) Slow Sounds

MOM gets into a mode where every sound is preceded by several seconds of
silence. Sometimes there may be a faint clicking sound. Usually saving,
exiting and reloading fixes the problem.   [BLJ]

R) Unearned Fame

Occasionally, for no apparent reason the computer will give you 400 extra
fame or an entire spellbook for one of the colors. This makes a big
difference in your score. We have run into this locally, the resulting
score: 191%.

                                        [George Tertysznyj (whatthis@hookup.net)]

S) Helper Ships In Naval Battles

Occasionally, in a naval battle you will get extra ships. After the battle
they are gone. This used to happen more frequently, but has still been seen
in v1.31.   [danhite@aol.com (Dan Hite)]

This is related to the SuperGalleys bug -- the ships are actually summoning
demons, which show up as more galleys. This happens because of casting the
spell Raise Dead, then attacking a galley before exiting the game entirely
and restarting.   [DP]

T) Word Of Recall On A Ship Strands Passengers

Word of recall on a warship leaves its passengers behind in the ocean where
they do not immediately drown. I wonder if you could build roads with ocean
engineers this way? (No. [BLJ])   [danhite@aol.com (Dan Hite)]

U) Not Able To Cast Spells

In three of my games I've gotten into a position where the computer won't let
me cast spells during combat in my fortress city, despite plenty of mana. I
have a working theory, that it occurs after some point where I've exhausted
my mana reserve to zero and restored some mana via alchemy (gold exchange).
                                        [rainbow@apxws48.ih.att.com (Rob Buchner)]

V) Not Actually Bugs

    * Some enchantments don't take effect until the next turn. One example:
      The food production increase from Gaia's blessing. So you may think you
      are seeing a bug when some benefit doesn't occur. If so, check at the
      beginning of the next turn, to see if the benefit shows up then.   [BLJ]

    * All creatures immune to illusions (ie. undead) are immune to many
      sorcery spells. If you try and cast such a sorcery spell on an undead
      unit, the computer will report that the creature is immune. Immunity to
      Illusions, True Sight, and Undead (Wraiths, Skeletons, Ghouls, Death
      Knights, Zombies, Werewolves, Black Channels, etc.) give immunity to
      the following: Blur, Confusion, Creature Binding, Invisibility, Mass
      Invisibility, Mind Storm, Psionic Blast and Vertigo.

      Black Channelled units are NOT immune to invisibility unless they had
      that ability before; same for animated units. Unless they're the enemy
      units, since the bug only works one way, against the player. I don't
      know about Blur -- it might work despite the attacker having immunity to
      illusions. There's no easy way to check it, since it makes almost no
      difference even when it is working. (I hacked it to have a casting cost
      of 10, and still I almost never waste a round casting it.)   [DP]

Dirk Pellett found many, many more bugs:

If you throw Spell Lock in combat, it does NOT prevent a Dispel Magic/True
or Disenchant Area/True from dispelling any other unit spells at the same
time. Therefore the spell is completely worthless in combat. (I hacked
spelldat.lbx to make it impossible.)

When Spell Lock does get dispelled, the game doesn't bother to tell you.

If you have a Holy Arms spell in effect, the enemy wizards try and try to
dispel the Holy Weapon spell on individual units.

When it dispels Holy Weapon that was cast on the unit overland, it reports
it as being gone, but does NOT remove it until the end of combat (even when
Holy Arms is NOT in effect).

When an enemy wizard throws Disenchant Area, sometimes it reports the eerie
result "None has been dispelled."

An enemy can "dispel" a web spell instead of fighting his way out of it,
but YOU can't.

I summoned a unit of Phantom Warriors, and the enemy threw confusion at it
and it worked -- and then, his bowmen shot at it when I still controlled
it, he healed it when HE controlled it, and the next time he got control,
he threw dispel magic, dispelled the confusion, thereafter he had PERMANENT
control of it. Gee, I'll have to try that -- throwing dispel magic when I
get control of a confused unit, and see if it fights for ME when it's no
longer confused about who to fight for. I wonder if I'll get to keep it
when the battle is over.

Win a battle while one of his units is confused, and you won't get
experience for that unit. Same goes for creature binding and posession.

Win a battle by creature binding (or animating, or confusing) all of the
powerful monsters, and you won't get any bonus fame for them.

Throwing a disenchant area spell to get rid of something HE threw can also
dispel unit enchantments on your OWN units. It might be that this happens
only when the unit is confused and under his control at the time you throw
the disenchant, or it might happen other times.

Chaos channeled units with "demon skin" show +3 defense out of combat, but
as soon as they're in combat, it's +6 defense (which is excessive for a
spell with no upkeep).

If you chaos channel barbarians, they can get fire breath 2 points; they
LOSE their thrown weapons (pretty nasty, if you threw lionheart, flame
blade, giant strength, etc on them to pump the thrown weapons too). Not
only is the fire breath attack weaker, there is no way to increase it,
unlike the thrown weapon attack, and some units are immune to the fire
attack but nobody is immune to thrown weapons (all weapons are assumed to
be magic weapons if the unit is a chaos creature). This makes Doom Mastery
a worse-than-worthless spell if you're building a lot of barbarian units.

Chaos-channeled fire breath is not increased in a chaos node area; it stays
at 2, unlike breath attacks of summoned chaos creatures. (And a 2-point
breath attack is almost worthless, except as a way to let a walking unit
attack a flying unit.)

Enemy wizards can throw chaos channel on the same unit as many times as they
want (or, at least three times).

When a chaos-channeled unit dies in battle, you can't raise it with Raise
Dead.

You can throw Heroism, Holy Weapon, Holy Armor, Eldritch Weapon, and Flame
Blade on a chaos-channeled unit out of combat, but not IN combat. Same for
Torin the Chosen. It should either be impossible, or else work both places.

The game lets you cast Heroism on a unit that has 120 experience already,
if you cast it in combat, thus wasting the spell. (This can easily happen,
since Healing and Heroism look similar.)

When you have Warlord skill, or Crusade spell in effect, casting Heroism
on a unit in combat only makes it elite, not ultra-elite or champion.

Enemy wizards can throw heroism on summoned creatures. I've seen it on hell
hounds most often, but also on sprites and nagas.

Flying Fortess spell is worse than worthless: your OWN foot troops can't
leave the city during combat, can't even attack flying enemy units that
are adjacent to them. It does NOT prevent walking enemy spell casters and
archers from attacking, and sitting outside your city pasting you all over
the place while your foot units stand there helpless, unable to rush out
and engage in melee. Basically, the stupid worthless spell does nothing
but create a prison for your own walking units, contrary to the help text.

Enemy wizards throw Earth to Mud against units that only move at 1 to
begin with.

Enemy wizards can throw Earth to Mud on your exact location even though
you're invisible and he can't know where you are.

Enemy wizards throw True Light if you have undead units, never throw it
if you don't, even though the units are invisible (Nightblades or Night
Stalker) and there's NO WAY they can KNOW which one you attacked with.

Even when you're invisible, he KNOWS whether you have any spells he can
dispel with Disenchant Area -- he won't throw it unless you DO.

In a battle on an open field, if you're invisble and flying, they won't walk
up to see who's there unless they have thrown weapons (they 'know' you're
flying even though they can't see you), but if you're invisble and walking,
they will rush forward to attack (they 'know' you're walking, even though
they can't see you). When you move off the original square, they stop
coming forward, even though they can't possibly know that you moved.

An enemy unit makes no sound while moving, if it's invisible, unless you
can see invisible, in which case it makes its usual sound. Gee, I thought
it was Invisibility, not Silence!?

If your city (without walls) is attacked and your walking unit is too weak
to keep the enemies out of it, they'll walk all over it, wreaking massive
damage -- that's obnoxious but part of the game. But if your FLYING unit is
too weak to keep them out, they'll just stand there looking stupid, doing no
damage to your city, just because they can't attack the flying unit.

Even when he can see you're immune to magic, he throws flamestrike.

Enemy wizards throw ice bolt on units with cold immunity.

Even when you have a 20 resistance, he throws life drain... duh.

Life drain over and over on a war troll with great resistance? Duh.

Throws Guardian wind, when you have no units with missile attacks? Duh.

Throws resist magic on his own unit with magic immunity? Duh.

If one battle in a turn is in a city, the next battle the same turn, even if
it's in the wilds, will be treated as a city battle for the purposes of army
movement. They'll sit there and defend one particular square on the open
field, even moving to cover it if that unit is killed.

Wall of stone spell says "no upkeep" but it actually costs you gold.

Evil presence spell shows the demon head on every building except cathedral.

Cloak of Fear spell works BACKWARDS: if the enemy unit you are attacking
blows its resistance roll, *YOU* can't hit *IT*. I had a wraith beat on a
mind-stormed spearman for 50 turns without doing any damage to it (defense
of 0, resistance of 0, wraith had cloak of fear). I don't know whether it
works backwards when it's on an enemy unit and he attacks you, so I only
know it's worse than worthless for the player to throw it (or enchant it on
an item, or to wear an item that has it).

After you throw True Light, you can't throw Mass Healing because it tells
you "That combat enchantment is already in effect." Mass Healing is not
even a combat enchantment, let alone the same one as True Light.

Invisibility items don't make you invisible in combat. (NOTE: the spell
works fine.)

A unit under the influence of black sleep, but protected by guardian wind,
still takes full damage from arrows -- the guardian wind spell should
protect the unit even if it's sleeping, and how can all the arrows hit from
all the way across the battlefield anyway, even if the unit IS asleep??
Black sleep should only cause melee damage to be full strength. Missile
damage should still have to roll to hit, then ignore shields (but NOT ignore
guardian wind's contribution to shields)

Subversion appears to function backwards, or possibly wrap around. I threw
subversion three times on a particular wizard in one turn, one game (I had a
massive casting skill, yes), and the very next turn he was ALLIED with ALL
the other wizards. If it isn't backwards, it's at least worthless. (It
probably only works when thrown against the player. *grumble*)

Wall of Darkness stops enemies from shooting at anyone, whether they are
inside the wall or not. (And it should be castable in any battle, not just
a city, to create a safe haven for your units. Same for wall of fire.)

Wrack does NOT check each figure for whether that figure takes ONE point
of damage -- no way could so many entire units all drop dead at once, while
others take no damage at all. (Example: four nomad spearmen units, recruit
and regular, resistance of 4 or 5; expected number of figures killed in the
first round, 15 or 16; actual number that die: 32.) It seems to be, the
hits taken by the unit is the SQUARE of the number of figures in that unit
that failed resistance, or something; I haven't figured out precisely what
it's doing wrong, but it's clearly wrong.

Famine does absolutely nothing against enemy wizards, possibly due to the
CHEATING that they never need to feed armies. It doesn't even make the city
starve, let alone force disbanding of army units.

Despite that fact, they try to dispel it anyway.

When a city is already at its maximum population and a new city is built
nearby taking away some of the land, instead of shrinking to the new limit,
the city begins to GROW, and continues to do so up to 25, even if the new
limit is as bad as 6! The same effect happens when the city is at max size
and a corruption or volcano reduces max size. Instead of starving, it will
begin to grow. The same effect also occurs if Famine is thrown on the city:
instead of starving away, the city begins to GROW, making the Famine spell
worse than worthless.

You can summon creatures then recall them with word of recall, and end the
combat in a stalemate, and the summoned creatures remain in existance at
your summoning circle. To clarify: attack war bears with a flying unit,
summon a phantom beast, recall it before the war bears attack it, then sit
there for 50 turns (holding "d"). Your new phantom beast will be waiting
for you at your summoning circle, ready to move on the overland map next
turn, at a cost of NO overland summoning time, and NO mana if a hero did
all the work.

Zombie Mastery has no actual effect on combat at all, yet it shows up in
the combat "Info" list.

Evil Omens affects combat by making life and nature magic cost more, but
does not show up in the "Info" list like other spells that affect combat
(holy arms, eternal night, etc) do.

If you cast word of recall on a unit with regeneration, then you win the
battle, it 'regenerates' back to the battle site, instead of being home
like you wanted it. You have to LOSE the battle for it to stay home.

Enchant road should automatically stop you from throwing the spell on
any place that doesn't even HAVE non-enchanted roads. For that matter,
enemy wizards shouldn't throw it on places without non-enchanted roads,
and especially not on Myrror!

Original cities on Myrror are not counted as enchanted roads, when a unit
that FLIES moves into it. Walking units have no problem, and new cities
built on Myrror are considered enchanted from the beginning. You have to
have an engineer "build a road" in the city to make it an enchanted road
for flying units.

Invisibility makes enemy attacks either -1 to hit, or -2 to hit, depending
on which version you believe: the help text for the spell, or the help text
for the icon on the unit that has the spell.

Numerous other help texts contradict each other or the obvious function of
the spell. For example, help for the Holy Armor spell contradicts help for
the Holy Armor icon on a unit that has the spell active. It's +2 defense,
not +3 like the icon help text claims.

A unit flying along and happening to pass over one of your ships stops and
goes into "patrol" mode. It never gets to its destination because it never
leaves the ship unless you happen to notice it and get it started again.

Even a SHIP passing over another ship stops and deletes its movement path.

A trireme with two units on board refuses to move onto a place with any more
units already present -- even if those units are water walkers, and don't
need the ship. This can make it impossible to stack up the units you want
in an attack on a coastal city. You can't even work around it by trying to
move the ship away while leaving the passengers there, or moving the ship in
first and the water walkers later.

A unit set to "patrol" on a ship gets a 2-space scouting range while the
ship moves along. How does it 'patrol' without leaving the ship??

On the display of a unit, if the second row of hits are all dark due to
damage, it displays the second row behind the first, where you have trouble
seeing it, but if even one hit in the second row is not dark, it shows it in
front where it belongs.

The "Expanding Help" option doesn't make any difference anywhere I can find.
There seems to be no way to get rid of the useless yellow lines.

Units should not cost any food while under a Stasis spell. Mana is debateable.

Consecration spell displays the city picture before dispelling enemy spells, so you see it with Consecration AND the cursed lands / chaos rift / famine, or whatever. You have to look again to make sure it worked.

At some point, the option to build a spearman or swordsman is not allowed, when the city is highly developed. There is no workaround other than to tear down buildings so you can build a spearman again. If you're desperate for a unit to defend the city, you might not WANT to take two turns to get a pikeman, and lose your city because of it! GRRR!

Floods of enemy engineers constantly build roads where there are ALREADY roads. It is highly annoying to the player, and a major waste of production of the enemy's cities. (It SHOULD waste food, of course, but doesn't.)

When a blademaster hero gains a level, the display of new abilities does not show the value at the correct levels. It actually increases on even levels, but it's displayed on odd levels.

Leadership claims to give the bonus every 2 levels, but it's actually every 3 levels.

Super-leadership, with a 50% bonus, SHOULD give the bonus every 2 levels instead of 3, but instead gives absolutely no gain whatsoever until 6th level, and then never again. It calculates the bonus by dividing by 3 and rounding down, then dividing by 2 and rounding down, a double loss. A super-leader should be better than a normal leader beginning at level 2, not level 6.

Leadership and super-leadership doesn't help chaos-channeled units.

The best chaos spell for units, Metal Fires, becomes useless when you use the other great chaos spell for units, because chaos-channeled units do not benefit from Metal Fires. That would be like Iron Skin not working on a Regenerating unit, or Lionheart not working on an Invulnerable unit. (Or not being able to cast Mass Healing when you have True Light in effect.)

When you're building a unit in a city that has a +1 to hit (e.g. Elven Lords or Minotaurs), it doesn't show the + value on the display.

The city display for new units also doesn't show how many shots it gets with a range weapon.

Instead of showing Pathfinding skill for Rangers in the city display, it shows Forester and Mountaineer. Granted, those two abilities in the same stack gives the stack Pathfinding, but the game is capable of showing the right skill icon for Rangers that already exist, why not in the city, too?

And by the way, how does having Mountaneering plus Forester manage to make a unit go through SWAMPS eight times faster? And where is the "path" to be found on the ocean waves, for walker-walking pathfinding units?

If a unit has more than 4 abilities, the display is screwed up for that unit, in the city building it. (Ok, granted, no unit has more than four unless someone edited the data file by hand, like trying to give paladins the "dispel evil" ability.)

When default wizards have 11 spell picks, it works fine for enemy wizards placed in the game as opponents, but when the player picks a default with 11 spell picks in one realm, it doesn't give him the default 2 uncommon and 1 rare spell, instead it gives the last very rare spell from the previous realm of magic. (E.g. armageddon spell, when you chose a default wizard with 11 nature books.) (Ok, granted, this only happens when someone hacks

        the executable to set different default wizards.)

        When a default wizard has spell books from more than two realms, the display
        of the spell books only shows two types anyway. It only corrects it when
        you actually choose that wizard. (Granted, this bug only shows up if the
        executable is hacked to give a default wizard three types of spell books,
        like node mastery and books of nature, sorcery, and chaos -- which should
        have been an option already.)

        Torin is *supposed* to know the Lionheart spell, among others, but does not,
        possibly because he's a Life creature instead of a normal hero. (If you
        look at the default hero data in magic.exe, the Chosen gets four spells,
        including Lionheart and True Light, but never actually gets to cast them
        in the game unless you know them yourself.)

        When the enemy webs or otherwise immobilizes one of your units, it sometimes
        goes barreling ahead, not giving you any combat options for the wizard (you)
        to cast spells (and no, I don't mean Auto mode).

        Enemy heroes and settlers and engineers can retreat during the middle of
        YOUR combat round, even between actions of two of your units. Cheaters.

        Enemy units can retreat after taking all of their actions in a combat round,
        which is not allowed for the player. Cheaters.

        Other enemy units NEVER retreat, even when the situation is obviously a
        lost cause and they'll just die without doing any damage. Like when a lone
        catapult has used its last shot, and sits there waiting to die. It SHOULD
        retreat, in that case (although retreat SHOULD be based on relative speed of
        the units, not just a random roll, so slower units can't retreat and faster
        ones can always retreat).

        When the only enemy units left are under a Black Sleep, and your ghoul is
        rushing forward to kill them, the stupid game sometimes ends the battle and
        declares you the winner -- WITHOUT giving you the units as undeads. You
        have to fiddle around re-running the whole battle making sure the ghoul can
        get there and kill them all before the game screws you.

        Units under a Black Sleep spell somehow have no trouble evading the battle.
        Instead they should be automatically killed if the rest of the units evade.
        When they're the only ones left, the evade option should be disabled.

        Units under an Entangle, with no movement whatsoever, can somehow still
        evade. There should be NO WAY. Web should be the same: evading should be
        impossible while under a web. Only after the unit fights its way out of the
        web should it be possible to evade.

        Entangle is *supposed* to reduce the enemy units' movement by one point per
        turn of combat, but instead reduces it by 1 point, period, thus making a
        very rare spell almost worthless. It should reduce it by 1 each turn that
        the unit fails resistance, with a worse minus to resistance each turn (so
        even a hero with 20 resistance will eventually get dragged down). (Even
        better, it should be based on might, NOT resistance, so shamans would be
        easier to entangle than stag beetles.)

        Enemy wizards waste turn after turn transmuting a particular resource back
        and forth, back and forth...

        Enemy wizards waste time throwing transmute or change terrain on parts of
        the map that are not close enough to a city to matter. Unless they're even
        worse cheaters, and ARE getting benefit from those squares.

        Idiot enemy wizards throw transmute on admantium. At least it doesn't change.

        Enemy wizards with a massive casting skill can still only cast one spell per

turn. Yet they continue to throw small spells like skeletons and transmute.
They should cast as many spells as they have skill for, the same as the
player gets to do.

Cheater enemy wizards don't have to pay upkeep costs on summoned creatures.
For example, the cheater can have one city, producing 5 mana plus 10 mana
from the fortress, and even tripled like the cheaters get at impossible
level, it isn't enough to support 7 doom bats and 14 hell hounds (70 mana)
(let alone the mana to summon all of them in the first place and accumulate
enough gold to hire 6 heroes besides).

Magic Vortex is supposed to do massive damage to a city, but it actually
doesn't do any more damage than an ordinary enemy unit within the city
walls for the same length of time. In fact, it does less, because it's
impossible to keep it within the city area for the whole battle.

A hero with an item giving "- to save" does LESS damage with Life Drain
than the same hero dropping that item first. The "- to save" works as it
should for other resistance spells, like warp creature, but is worse than
worthless for Life Drain. Example, staff of -4 spell save, spearman with
4 resistance, should take 1 to 10 damage from a Life Drain, instead takes
NO damage 80% of the time, and only 1 or 2 hits the other times, exactly
as if its resistance was 4+4 instead of 4-4. If you have a total of -6 to
resistance from 2 items, and the unit has a 4 resistance, Life Drain will
NEVER do any damage, when it should ALWAYS do damage.

Enemy priests try to cast Healing when they see a wounded comrade, but
the spell never gets cast, and the next priest does the same thing, thus
wasting the entire turn for EVERY priest in the battle, without healing
anything.

Regenerating enemy units know absolutely nothing about using that ability to
good advantage: hit and run, hit and run, only attack with non-regenerating
units once all the regenerating units are gone, having softened up the foes.

Fire breathing and first-strike enemy units very rarely use the ability to
good advantage, instead usually moving up adjacent to enemies and letting
them hit first. I can usually take out 8 hell hounds with 6 hell hounds,
and have five of mine left standing, without throwing a spell, by using the
battlefield obstacles intelligently.

Enemy units don't understand the threat from fire-breathing and first-strike
units, moving up adjacent to them each turn and letting them hit once and
back away to do it again.

Enemy units make very poor use of missile attacks at long range, instead of
saving a few shots to use against foot soldiers when they try to move up to
engage in melee. They should gauge the speed of the enemy, and hold back
the last N shots until the enemy is within N steps of melee, taking the last
shot at the last moment, at point-blank range.

Flying enemy units that can't possibly win the battle but are perfectly safe
from walking attackers, always go ahead and commit suicide instead of just
flying around in circles, thumbing their noses at the enemy walkers. A
paladin attacking a node full of sprites should have no chance of winning;
instead it's a slaughter with no chance of losing.

Enemy units with Planar Travel, whether natural (Shadow Demons) or even
specifically cast on it by a Life wizard, NEVER use the ability.

Enemy wizards waste time throwing Plane Shift, but as far as I've seen,
no units have EVER been shifted to the other plane.

Spell Ward does NOT prevent that realm of spell being cast in combat in the
warded city, as claimed in the description. E.g., Chaos Ward, walk in with

a normal unit and blithely throw flamestrike with no problem. It ALSO has
no effect on casting a spell of that realm against the city: Chaos Rift on
a city with a Chaos Ward on it WORKS! The only effect seems to be to keep
out the creatures of that realm, which does seem to work (at least against
the player moving his own chaos-channeled units into his own city; I can't
remember it ever mattering against enemy players), but hardly makes the
spell worth the casting cost or upkeep.

Disenchant Area in combat reports dispelling city enchantments like
stream of life, but they remain in effect after the combat is over
(as they should).

When you summon a phantom in a sorcery node, or fire elemental in a chaos
node, etc, it doesn't get its node aura bonus until the next turn, so you
lose the benefit if you attack with it immediately. (Workaround is to cast
any unit spell on it before attacking, but you shouldn't have to.)

Cheating enemy wizards cast corruption and raise volcano and earthquake on
cities they have never seen. (And no, they didn't throw Awareness.)

Raise Volcano is supposed to give "a 5% chance of discovering new mineral
deposits" but never does. (I think it would be excessive if it did more
than 0.5% anyway, but the idea is good in principle.)

Disintegrate has NO resistance roll: if your resistance is less than 10, you
are toast. That's the way the spell works, and that's fine. But a Charmed
hero with resistance 9 SHOULD be toast, but isn't. Charmed should not affect
a resistance roll when there isn't one.

It is ridiculous to give a hero "charmed" ability when the hero is already
magic immune! (I suppose it affects poison, but so what?)

All the various artifacts that have permanent magic immunity should not have
wasted any power on resistance!

Artifacts with Doom should not have phantasmal, or + to hit! Those are a
complete waste!

Endurance is not usable in combat (but I hacked spelldat.lbx to fix it).

Lots of other spells are 'misfiled' as the wrong type of spell. (E.g.
Black Wind is NOT an enchantment!) (Fixed by hacking spelldat.)

Raise Dead gives a screwed-up display, showing units twice in the same
place. (Previously mentioned, it also crashes the game later.)

The display of how much gold you're getting from Prosperity is wrong for
Dwarven cities, being doubled twice.

For Dwarven cities, the amount of gold you're getting from a market or
road bonus is calculated correctly, but shown incorrectly. It shows the
value it would have been if dwarves didn't pay double taxes.

Word of Recall on a perfectly healthy hero in combat very often leaves the
hero "injured" and having zero or even negative figures remaining, so it
gets killed instantly by even the smallest attack, and its own ranged attack
does no damage. It can take many turns of sitting around in a city to get
back the lost hits. (Nature's Cures and Stream of Life are work-arounds,
but it's stupid that you should have to.)

Consecration instantly purifies all corrupted lands from around a city --
but should leave them alone, that's what Gaia's Blessing is for, and it
may have been corrupted by a meteor instead of a Chaos spell, anyway.

When enemy wizards have 0 mana left at the end of their fortress being

taken, they are utterly defeated regardless how many huge dark elf capitals
they have left, but if they have 1 mana left at the end of the combat, they
can cast spell of return and finance it with their one klackon outpost. As
a result you have to be very careful when attacking a fortress to make sure
the enemy can't use up all his mana, unless you WANT permanent defeat.

You can black channel a chaos channeled unit, but you can't chaos channel a
black channeled unit.

It may not be strictly a bug, but it is EXTREMELY irritating that moving a
unit on top of one that has no movement points left zeroes the movement of
the second unit and makes it impossible to continue moving that turn. This
has caused me to restore the game and rerun the whole *&%^% turn more often
than any other cause, and there is ABSOLUTELY NO DAMNED REASON FOR IT.

It is just as aggravating that you can't move a unit through a stack of nine
units even when you have no plans to stop there. You have to do a lot of
stupid fiddling around to get the units to move the way they do in other,
more sensible, games. This assinine feature is made even more aggravating
by the requirement to leave huge stacks in cities to control unrest, meaning
you have to go through a great deal of hassle to move a stack past a city
without leaving the road and hiking through the mountains instead.

Doom on an item makes it automatically do damage and ignore armor, but it
ALSO cuts the attack strength in HALF, making it an absolutely stupid power
to ever put on an item. Enemy armor will almost never block as much as half
of the hero's expected damage done, unless the hero is a total wimp. Once
the hero isn't a wimp anymore, "doom, ignores armor" is BAD. (Example: a
warlock with arcane power, has a 22-point missile attack and items to make
it +5 to hit, averaging 17.6 damage. Doom makes it automatically do 11
points, but the target would need 22 defense to block as much damage as
Doom cut off the power of the attack, making Doom worse than worthless for
every attack he makes against a unit with less than 22 defense!)

Phantasmal on an item makes it ignore armor and do full damage, right?
So if the hero is +7 to hit, it should always do exactly the amount of the
hero's attack strength. But it doesn't. If the defender is in the city,
the city walls still count, protecting the target unit.

On the Magic page, it shows the bonus from Mana Focusing and from Sage
Master by increasing the value of any mana allocated to those areas, but
the bonus from Archmage is not shown at all. (It seems to work, but the
display doesn't show it.)

A 50% bonus to casting from having 13 spell books makes a spell cost half
as much to cast, but NOT half as much to research. Instead of reducing the
time to research a spell to half by *doubling* the research points, it only
gives a 50% bonus to research points, meaning it takes 2/3rds as long to
research the spell, instead of half as long. (What it *should* do, of
course, is reduce the research cost by 50% the exact same way it reduces
a spell's casting cost, and leave the allocated research points alone.)

Some items don't 'glow' even when enchanted with a spell. For example,
an amulet of flight should 'glow' blue, but doesn't, on some of the places
it is shown. It works right on other places.

An item being enchanted doesn't always 'glow' with the right color for the
name it was given. For example, if it is NAMED "Axe of Flaming" it should
glow red, regardless of what other powers it might have, but some powers
will take over the color without taking over the name, and vice versa.

When both Warlord and Crusade are in effect, a newly-hired hero reports
gaining only one level, when it actually gained two.

If you attack a city and end up destroying the city walls (according to the

end-of-battle report), and you attack again with other units the same turn,
the walls are still there for the second battle.

If you attack a city and end up destroying several buildings, and attack
again the same turn, they are reported as being destroyed a second time.

Enemy wizards throw giant strength on a settler, giving it a total melee
attack strength of 0. It should either be 1, or they shouldn't throw it
on settlers (and catapults, etc).

The Mana Leak spell reduces a wizard's mana reserve, but not the remaining
castable in that combat.

Pressing "X" while looking at a city still shows debug info.

Animate Dead on enemy units lets them fight for you during the combat,
but when the combat is over, those units still belong to the ENEMY, and
they're sitting on the same place you are! The spell only works right
when cast on your own units (with the exception of the crashes that will
happen later from random memory overwrites).

Units that can see invisible can't see invisible units within their scouting
range overland.

Enemy units that can see invisible and have magic missile attacks (such
as shadow demons) never use those attacks against your invisible units.

After a city is razed, the movement cost to cross the place it was is 1,
not .5 like a road and not the original terrain's movement cost. This is
regardless of the type of unit moving across it, unless it has pathfinding.

Enemy wizards (sometimes, only rarely) summon a Floating Island on a tundra
space.

You can't summon a Floating Island on top of an enemy unit - but THEY can
summon one on top of YOUR unit.

In combat, you can't move a unit to the corner squares of a city when there
are city walls in the way (that's good), but summoned creatures can show up
on those places anyway, right in the 'corner' of the walls.

In combat, a unit can be charged 2 movement points for moving diagonally
onto a grass square, if it's in a certain place on the field. Other grass
squares only cost 1.5 movement to move onto diagonally.

In combat, attacking a unit sitting on a particular square uses up both of
your attacks, but attacking the same type of unit sitting beside it, with
the same type of attacker, lets you take both attacks. The annoying part
is, there is no way to know when this will happen until it happens.

In combat, enemy units can walk below the bottom of the combat area, making
it impossible to target them with range weapons or melee, yet they can
attack from there if one of your units is adjacent.

When an archer is adjacent to an enemy in combat, the cursor changes to the
crossed swords, so you THINK you have to move away to shoot and avoid melee.
Instead, it will actually shoot the arrows, and the enemy does NOT attack
back. That's with slings and arrows. However, the enemy WILL attack back
at an adjacent enemy shooting magic missiles at it.

When an archer has missile shots left, there is NO WAY to attack an adjacent
unit with melee weapons instead. Picture the Huntress with a flaming axe
of giant strength, +10 attack, trying to stop halfling shamans from killing
her pals -- she has to use up ALL of her bow shots, at one per turn, before
she's allowed to use that awesome axe to kill two shamans per turn. Unless

the shamans attack her, she can't attack them. (Makes you want to throw
Warp Wood on yourself -- and there's no reason you shouldn't be able to.)

Enemy animated units can see your invisible units, but your animated units
can't see enemy invisible units.

Clicking on the small map icon (upper right) can take the main map all the
way to the top, but it can't take it all the way to the bottom. This is a
nuisance mostly when you're melting the south pole with volcanoes, and when
you're looking for a southern city to cast a spell on.

City population gets chopped off at an even thousand whenever it should have
crossed over it, thus forcing even more busy-work in adjusting cities to
build the fastest rate without wasting the food they could have produced.
Is simple addition that hard? 11,980 + 130 = 12,110, NOT 12,000!

When the world is first created, neutral cities can be put in a place with
a maximum population less than the size of the city it creates: size 7,
maximum 2, in a mountainous region, for example.

When the world is created, it can put a ruin on top of wild game, and then
even after you've explored the ruin, you can't see what's in it without
exploring it again, because the surveyor reports the wild game instead of
the monsters in the ruin.

When you have 100 gold and 10 fame, and you're famous + charismatic, you
have enough fame AND gold to get heroes costing other wizards 200 gold --
but they never offer, because it checks your gold BEFORE taking charismatic
into account. You have to have twice as much gold as any hero will ever ask
for.

Movement path goes crooked at the edge of the world, often screwing up where
you intended to move to.

Raising volcanoes where the world wraps around can screw up the mapping of
the world quite badly, creating adjacent land squares where there was no
land before.

When you evade out of combat, it can put you adjacent to a dark place on the
map so you can't see what's right beside you -- and sometimes you are forced
to move there.

Units in patrol mode should automatically remove darkened areas that are
within their patrol range, but they don't.

Units moving to the other plane through towers or plane shift should remove
any darkened areas within their scouting range IMMEDIATELY, instead of being
forced to take a step ON that plane before they can see the extra distance
they are entitled to see.

When units from two different wizards are in opposite planes of the same
tower while a Planar Seal is in effect, they should fight the same turn the
seal gets broken (by disjunction). Instead they ignore each other.

When you have units in a tower that moved there from two different planes,
and an enemy attacks, you only get to defend with the units from one of the
planes, instead of combining all of them into one battle. And if the enemy
wins, it leaves both his units and your remaining unused units sitting in
the same tower.

Cities with a population of six (and possibly other values), and enough
buildings to feed them all, are still forced to have a farmer even though
they have a surplus of 3 food.

Under some conditions, the display of food sources shows Forester's Guild

providing ONE food, not two. I haven't figured out what causes it.

Klackon Engineers and Settlers don't have the Klackon defense bonus.
(Until I hacked the data file.)

Newly-created Zombie units (Zombie Mastery) don't start with full hits
unless the unit that died had at least 3 hits per figure.

When you have Charm of Life in effect, and one of your units takes more
damage than the unit normally has without Charm of Life, it ends up alive,
but with ZERO (or even negative) figures left. Other units taking damage
end up with fewer figures than actually survived the battle. The same thing
might happen with Lionheart and Black Channels (both of which increase
hits), but I haven't confirmed it.

Some percentages of damage show up as red on the overland map, but yellow
in combat.

You can't throw Water Walking in combat, even if you wind-walked over the
water to attack some ships. If none of your units can actually move, your
warriors have to stand there and let your mages get beat up by the ships.

If you throw Water Walking on a unit with Wind Walking (so that it can move
in combat over water instead of stand there stuck in place), then you move
it ALONE on the map, it WALKS instead of wind-walks, taking full movement
cost to go through hills, forests, and mountains. If another unit is with
it, it works as it should.

After a wizard is defeated, it is removed from the display of wizard's power,
and from the legend on the overland map, but something can happen to make it
come back so it's displayed again, always with 0 army strength, cities, and
magic power.

Gaia's Blessing can cause volcanoes on the corners -- out of the cities's
useful area of control -- to become hills.

Call Lightning says it's supposed to drop "3 to 5" lightning bolts every
turn of combat, but it's unreliable, frequently giving only one, or even
ZERO lightning bolts in a turn.

Sometimes cities get messed up such that a building that can't exist without
some other building, DOES exist even though the other one doesn't.

The description for the Night Stalker spell says they're non-corporeal,
but they're not. They can't attack through walls, and Web and Cracks Call
work fine on them, if you happen to end your turn adjacent to an enemy unit.

The description of the Posession spell specifically says "heroes may not
be posessed". But enemy wizards throw the spell at heroes -- and it WORKS.
And THEN, the cheaters instantly run away because they have a hero, who runs
away, and you lose the hero without getting ANY chance to dispel the spell,
thus making Posession the equivalent of a Death Spell usable only by computer
players against your heroes.

On the "Spell Blast" choice page, it shows the spell being cast, and the
mana you need to blast it, so you can make an intelligent choice. And you
can see the mana each wizard has left, on the detail page for each of them.
But on the "Power Drain" choice page, instead of showing the mana left so
you can avoid 'draining' a wizard who doesn't HAVE any, it shows the current
state of the wizard's feelings (usually "Hate") which is worthless there.

When you have exactly enough casting skill left to cast a spell overland,
with none left over, AND no heroes in your fortress helping cast spells,
it doesn't say "Instant" on the spell book. When you cast it, expecting
it to finish the spell next turn, it casts it instantly anyway (possibly

wasting the spell if the unit you were going to cast it on wasn't due to
arrive until next turn).

If an enemy throws a Chaos Rift on your city, and rather than dispel it,
you tear down buildings to get back some money from them before the rift
destroys them, whatever you just tore down is reported as being destroyed
by the Chaos Rift later.

Because the game uses the same byte for the strength of all powers of a unit,
and because it uses negative values for a more powerful death, stoning, and
life stealing attack but positive values for a more powerful poison and doom
attack (and resistance to all, and holy bonus), the Chaos Spawn's death gaze
and stoning gaze are essentially worthless -- "Death Gaze 4" and "Stoning
Gaze 4" mean the target gets +4 to resistance, and can't possibly be stoned
or killed if it has a natural resistance of 6, which almost every unit has.
If the resistance was reversed, so the strength of the attack increased with
positive values, then the Chaos Spawn with a "Doom Gaze 4" would also have
a MINUS 4 resistance death and stoning gaze, and it might actually matter.

Enemy wizards are surely offered as many items as they are offered heroes,
yet their heroes NEVER have any items -- not even after the report of a
god giving them an item for free. Even wizards with Artificer skill never
enchant any items for the heroes they have in abundance. Only once have I
seen an enemy hero with an item -- and it was one I created (the hero who
was carrying it died in a failed attack on the enemy capital).

The game offers mercenaries before heroes, so unless you already have six
heroes, you'd be stupid to accept an expensive mercenary -- after you spend
all your gold, you can't get a hero that turn. If it was the other way
around, you could accept a mercenary without any loss of potential heroes.

Oh, I figured out the bug about casting spells in your home city. When a
battle starts, the game determines the maximum mana you can cast by taking
the lower of your casting skill, and your current mana reserve divided by
the "distance factor". Since the "distance factor" is 1/2 in your home
city, it divides by 1/2, doubling your mana reserve. If you have more than
16383 mana, the value exceeds 32767, which is the maximum positive value it
can store in a 16-bit signed integer, so you get a NEGATIVE amount of mana
available. This is why you can't throw any spells -- and it's also why you
can do a total wipe of an enemy wizard by waiting until he has more than
16383 mana to attack (you get half of it, to add injury to injury!).

At the start of a turn, a neutral city can join your cause, which is a good
thing, usually -- but it sometimes has a larger garrison in it than the food
it produces, and the stupid game will disband your brand-new ultra-elite
admantium-armed hammerhands in order to keep the stinking lizard swordsmen
in your new lizard city. It should process the food and stuff before adding
the new city, to make sure it doesn't screw anything up.

Food and mana income/expense are not kept updated, and sometimes it can
report that you have enough food, but when you take your turn it will
disband units because of a lack of food. This can happen when you build a
new city overlapping an existing city's resources. In the case of mana,
if it overlaps a mine, it can reduce your mana income so you won't actually
finish the research you thought you would -- and it won't update the totals
and warn you it won't be enough, unless you go look at the city that got
overlapped. If you're using the mana income to support summoned creatures
or spells, you can lose them without warning for the same reasons.

The Wraithform spell lets the unit travel overland "as if every land square
were a road" it says, and it ALSO lets the unit travel on water the same
way (just like a marauding phantom beast, or a magic spirit). However, the
Wraithform ability enchanted into an ITEM does NOT give the unit the same
ability -- it can walk on water, but at a cost of 1 per step, and on land,
it pays normal movement costs.

By the description of the Life Drain spell, it shouldn't be possible to do
7 points of damage to a creature with a resistance of 10, but it happened.
I suspect it is doing an extra point drained per 5 mana spent, instead of
per 15 mana spent like the spell description says.

Enemy wizards can throw Black Channels on summoned creatures, the same way
they throw heroism on summoned creatures. I've seen it on shadow demons,
but there's probably no limitation. The spell description says "normal
unit" just like it does for heroism.

You can't throw Cracks Call or Fire Elemental when the battle is over water,
which is as it should be. But you can throw Earth to Mud. (I tried, but I
couldn't figure out how to set it to match Cracks Call.)

When the Armageddon spell creates volcanoes, it does not update the game's
map of movement costs, so units move through the new volcanoes as if they
were the original terrain.

When a city is having a population boom (or, presumably, a plague), and any
city preceeding it in the list of cities gets razed, the city having the
population boom (/plague) changes to the next one down in the list.

When you attack and RAZE a wizard's city as the first hostile action you do,
and it gives the message "the attack on the hamlet of <whatever> jeopardizes
blah blah.." it names the wrong city, because the one you razed has already
been removed from the list.

The turn after you throw a combat enchantment, every unit on both sides of
the battle just stand there for one turn instead of moving or attacking,
even if the spell has absolutely no effect on it (counter magic vs a wraith,
for example).

When you attack a unit or creature, it shows a series of pictures to
animate the counter-attack. One of the pictures of the Hydra is blank,
so it disappears for a moment when you attack it.

In combat, when a unit is under a Black Sleep, it still turns to face an
attacker, and still animates its counter-attack, the one it DOESN'T get.

A flying unit will counter-attack an adjacent walking unit throwing magic
missiles at it, but will not counter-attack a FLYING unit throwing magic
missiles. (E.g. a wraith will attack an adjacent halfling shaman attacking
it, but not an adjacent draconian shaman doing the exact same thing.) This
bug is not reliable, however, so it depends on some unknown factor also.

Word of Death spell works just fine against a unit with death immunity.

The requirements are set up so that you can't get Nomad Magicians (nomads
aren't allowed to build wizard's guilds), but they're in the table of unit
types.

The requirements are set up so that you can't get any Draconian Engineers but
the unit exists in the table of unit types. (The picture looks more like
draconian pikemen anyway, and flying road-builders are far-fetched.)

The game claims that Nightshade near a city provides a 100-point dispel
against any harmful city enchantments (and states it in such a way that
it sounds like it SHOULD attempt to dispel global enchantments that may
harm that city, such as Meteor Storm, but that never seems to happen).
In actual fact, however, the power of the dispel is EXTREMELY weak. If
it was 100, it should cancel a Corruption spell 100/140, or 5 times in 7.
In actual tests it seemed to be closer to 1/41, meaning the power is ONE
instead of 100, which is almost worthless. It's highly doubtful that it's
as high as 4, since it sure didn't seem to give a 4-in-44 chance.

CRASH BUG: when the enemy wizard confuses all your units, and they all
happen to be immobilized at once (i.e. not on his side, but not available
for you to move, either), then NO options work, and you can't end the turn
of combat, forcing you to kill the game and reload.

The cheater doesn't have to cover the cost of spell-blasting your spell,
by having as much mana reserve as you've already cast into the spell, the
way YOU have to do when you throw Spell Blast.

On the end-of-turn summary, it reports "City Deaths" due to starvation
(under heavy taxes, the rebels refuse to even feed themselves, which is
stupid, but not the bug), but it doesn't report a city losing population
due to a plague.

Earth to Mud is supposed to use up all of your movement when you step into
it, but if you have enough, such as when under a Haste spell, you can move
into mud and continue moving the same turn.

Non-corporeal creatures are not supposed to be affected by Earth to Mud,
yet enemy phantom warriors take the long way around the mud instead of
just walking through it -- as if it COULD make any difference to units
that only move at 1 anyway. And your own non-corporeal units ARE affected,
using up all of their movement anyway.

The individual display of a unit changes to say "Death Spearmen" (or Chaos
Spearmen, in the case of Chaos Channels), but when the cursor is over an
army on the main display of armies, it shows the type of unit as the race
and basic type (e.g. Orc Spearmen), even when the unit is undead or Chaos
Channeled.

An enemy wizard built an outpost in a place the surveyor said had a max
population of 0: all desert and mountain except for one hill. A few
turns later, he had a city of population 1, just like always.

Enemy wizards summon up a magic spirit, then just leave it sitting one
step from the original city, rather than waiting to summon it until it's
needed (or even keeping it in the city, better protected).

Enemy wizards build a flood of useless ships and let them pile up on the
shores of land-locked lakes. It should check to see if a ship is needed
before wasting the production points to build one.

An enemy wizard will throw Confusion and Weakness against a unit which is
already under a Black Sleep.

Defending units inside castle walls will not attack an adjacent unit if the
unit is diagonally to the right (the defender's right), beside the corner
of the castle. They'll only attack if it's in one of the two central spaces
in front of the castle door. But the attacker can freely attack the defender
from the corner space.

When you have Zombie Mastery in effect, and kill a unit with Disintegrate
or Cracks Call, it doesn't come back as a zombie, which is how it should
be. But when you kill a normal unit with Word of Death, it doesn't come
back as a zombie even though it should.

You can throw Black Channels on a hero and make it undead (bad idea, btw),
but when a hero dies in battle, you CAN'T throw Animate Dead to get it back
(better than losing it completely, except it doesn't work).

When you throw Raise Dead (or summon a creature in battle), you get to pick
where to put the unit, but when you throw Animate Dead, it drops it onto the
battlefield in a random spot, which could be right in the thick of the fight
and it just gets killed again. In both cases, it should restore the unit to

the same place it was when it died (that's where the BODY is, after all), or
the spell should fail if that place is covered (or just not allow choosing a
unit that died in a space that is currently covered).

A wind-walker moving away from a ship only gets ONE step and stops, movement
allowance zeroed out for that turn, regardless how many movement points he
had left. You have to DISBAND the ship before moving the wind-walker to get
the full movement allowance that turn.

Two ships, three normal units, three heroes: you can't move another normal
unit onto it, even though you SHOULD be able to. One ship, two normal
units, three heroes; beside that, one ship, two normal units: you can't move
the two ships onto the same place, even though you SHOULD be able to. In
both cases, there would be only 9 units total and only 2 normal units per
ship (triremes, that is), but something is broken and prevents the move.

The spell Change Terrain updates the effect on cities as far as food and
production bonuses, but just like Raise Volcano, it does NOT update the map
of movement costs, so umpteen turns later, you can try to move through the
grassland and it STILL treats it like a swamp and burns all your movement.

When all of your units are webbed or slept, and you summon another one, it
doesn't get any action in the round you summon it, like it would if any
OTHER unit could move.

Exploring one side of a tower should explore the same tower on the other
plane, since there's only ONE tower, regardless which plane you attack it
from.

Turning off Spell Animations turns off the picture of the wizard casting
an overland enchantment (e.g. Just Cause), but there's NO WAY to turn off
the message entirely -- even with Overland Spell Events, Enemy Moves, AND
Enemy Spells all turned off, you still get the message that the wizard
has cast the spell.

The Witch hero is supposed to get four death spells including Black Prayer,
but they do not work. The Necromancer is also supposed to get four death
spells including Wrack, but unless the wizard hiring him knows those spells,
he can't throw them. The Priestess is supposed to get Holy Word, but does
not, and the Chosen is supposed to get Lionheart but does not. Apparently
all Life and Death spells fail with the exception of the Healer who CAN
throw Healing. HERE'S WHY! The spells are numbered beginning with nature,
sorcery, chaos, life, death, arcane. Since there are 40 of each of nature,
sorcery, and chaos, the first Life spell is numbered 121. Healing happens
to be numbered 125, and all the REST of the spells that DON'T WORK have
numbers greater than 127 -- the highest positive integer in a signed byte.
Apparently the game is converting the UNsigned bytes in the data file
into SIGNED words in the game, so the comparison always fails to match,
and the hero can't use those spells. Heroes can only use spells of the
realms of nature, sorcery, chaos, and the first seven life spells (minus,
of course, the non-combat spells; they couldn't throw 127, Just Cause, in
battle, even if they knew it).

The fact that the game randomly writes zeroes to memory is readily apparent
from the History report page -- numerous spikes to the bottom (that's 0)
show up, which weren't there before the game did SOMETHING that screwed up.

The game tries to calculate how many turns it will take to complete the
research on the current spell, but it is very often wrong, especially when
various factors enter into it, like chaos mastery when researching a chaos
spell, or sage master, runemaster for an arcane spell, or conjurer for a
summoning spell. Sometimes it overstates it, sometimes it understates it.

When a normal 1-hit unit is elite, it has 2 hits, and with both Crusade and
Warlord it has 3 hits. With just Crusade, the unit out of combat shows as

having 2 hits, but shows as having 3 hits per figure in combat. If it takes
more than 2 hits per figure, it lives, but afterward out of combat it has
zero figures left. Then when it goes back into combat, ANY attack on it,
even one that can't do any damage, automatically kills it. In fact, this
affects every elite unit whenever Crusade is in effect: it seems to have 1
more hit per figure in combat than the same unit out of combat.

A hero's items giving "- to save" have no effect when that hero throws Holy
Word. The spell is supposed to be -2 to resistance to begin with, then the
total of -7 from the hero's items should have given a -9 resistance, meaning
almost every creature would have been banished. Instead, NONE of them were.
It might even be the case that the hero's items are working BACKWARD for a
Holy Word spell, just as they do for a Life Drain.

When 17 cities gain a point of population on the same turn, it puts up a
long scroll, with an arrow to click to show more, but when you click it,
there is no more, because they were already all displayed. It only needs
an arrow when 18 or more cities grow on the same turn, or when there's a
conjunction or something else to report.

When a hero has 1000 experience and is dismissed, the same hero summoned
one turn later only has 450 experience.

You would think that a hero's Might would increase the thrown weapon attack,
but it doesn't. It increases by only 1 per level, while the hero's melee
attack increases by 2 per level. This makes the Barbarian and Amazon heroes
(both of whom have Might and thrown weapons) not worth the bother.

There is something badly wrong with thrown weapons, however. My Barbarian
hero had a flaming axe+6 +2 to hit, amulet +4 attack +2 to hit, Holy Weapon,
and was 6th level. This gave him a 21-point thrown weapon attack supposedly
at +7 to hit (and Eldritch Weapon to boot). However, when he attacked an
enemy hero who only had 9 hits and a defense of 5, who could not possibly
have survived 21 points of damage, the enemy hero DID survive and do damage
back, which had been happening to the stupid Barbarian all along in many
previous encounters, so bad that he was almost useless, a wimp who couldn't
even take on a handful of Guardian Spirits without help. When I tested it
by setting War Trolls to attack 1, thrown 25, +7 to hit, thrown weapons DID
work -- just like fire breath, ONLY when the unit initiates attack, and NOT
as a counter-attack. Even on a hero, the test worked, so *MAYBE* the bug is
that thrown weapon attacks do not actually use the weapon's attack strength
or hit bonuses. But when a 21-point thrown weapon attack at +7 to hit can't
keep a 9-hit unit from counter-attacking, there is definitely something
wrong with it.

Entangle is not supposed to affect flying or non-corporeal units, but it
does. Shadow Demons, which are both flying and non-corporeal, get ZERO
movement allowance after an enemy's Entangle spell, hence they never even
shoot their missile attack. Draconian units slow down to a speed of 1,
Wraiths slow down to 1, Phantom Warriors can't move at all, and so on.
This bug makes the spell FAR more powerful than it should be, even for a
very rare spell.

Life Drain works against zombies and skeletons, and every other Death
creature, it just doesn't give them to you as undeads when you win.

After casting Life Drain for enough points to raise your casting skill, it
will show the improved skill on the Magic page, but when you start another
combat the same turn, it uses the old casting skill instead of the new one
it just showed you. You have to save the game and reload to get the new
casting skill in another battle the same turn.

You can't throw Recall Hero / Word of Recall when the combat is taking place
at your summoning circle, but the enemy wizards CAN -- then when the battle
is over, the unit that was recalled is still sitting right there, the same

place it was before the battle. If you move other units in, either to try
again to take the city, or EVEN to reinforce the city you just took, you
have to fight the recalled unit all over again.

When you throw Flight on a unit that flies slower than 3, it gains flight,
but so does the entire stack, even if one of them walks. (In this case, it
was annoying, because the walking unit had Path Finding, yet the stack flew
instead, at half the speed it could have gone.)

Evil Presence is supposed to eliminate the mana income from shrine-type
buildings unless the city owner can use death magic. I don't know if it
works against the player, or against computer wizards who have neither life
nor death, but it is absolutely worthless against computer wizards who have
life magic. It does not reduce their mana income AT ALL, and it is an utter
waste of time and mana to cast it or pay upkeep on it. I threw it on five
cathedrals, two parthenons, and three temples; it should have reduced his
power by 71, tripled to 213 mana, making as much reduction as the recent
Good Moon gave him in increase, yet it had NO effect whatsoever in either
of the charts of wizard power. The only thing you get for it is the neat
little demon's head on top of his cities. Cute, but not worth it. (Oh,
they do take some time to disenchant it, but it's still not worth it.)

Since the whole purpose of Evil Presence (if it worked, that is), is to
stop the controlling wizard from getting mana from a city, it should be
automatically dispelled when a city becomes neutral by any method. Instead,
when you defeat a wizard, you have to go looking through all the new neutral
cities to see which ones have Evil Presence and turn it off manually.

When you take an enemy city, it automatically dispels all good enchantments
that he cast on it. It should also dispel all BAD enchantments that YOU
cast on it, but it doesn't. If you forget to turn off Chaos Rift, Famine,
Cursed Lands, or Pestilence, you pay for it double.

When an enemy throws Earth to Mud on a unit in the lower right corner, it
'wraps around' and gets mud in the upper left corner of the battlefield.

Black Prayer stops a Chaos Spawn in its (floating) tracks -- it reduces the
melee strength to 0, so the game thinks it's helpless, and never moves or
attacks with its Doom, Death, and Stoning Gazes while you shoot the heck out
of it. Even in a chaos node, Black Prayer + Weakness does the same.

A unit with Immolation should still do the fire damage against an attacker
even if it IS under a Black Sleep. A unit with Stone Touch should still
have the effect against an attacker touching it even if it IS under a Black
Sleep. A unit flying under its own power (not because of a Flight spell or
item) should drop to the ground when it falls asleep, so that ground units
can hit it. (But it should be temporary, flying again if Black Sleep gets
dispelled, unlike a Web.)

When you Life Drain an enemy unit and have to kill it with a melee attack,
you don't get the unit back as undead even though you did more than half
of the ACTUAL damage with Life Drain, because it counts the potential
damage from the melee, instead of only the hits the unit actually had left.
For example, do 3 points damage on a halfling shaman with Life Drain, then
run out of spells, and have to hit it with a paladin. The shaman has ONE
hit left, but if the paladin with four 9-point attacks hits it for FOUR or
more damage (ha ha), you won't get it as an undead.

10.5A) Pathfinding Quirks

(quoted texts are Kujala Matti, non-quoted are Ken's comments)

>Pathfinding doesn't always take the shortest path. It does not know that
>a unit can always move at least one map square/turn regardless of the
>actual movement cost of the square. For example if you have 1 movement
>unit and have to cross some mountains, the pathfinding may take a route
>around the mountains, even though you could actually get to your
>destination faster by going across the mountains.

The path generator apparently considers total movement points only, not
turns. This leads to the situation you describe.

>Pathfinding has tendency to ignore enemy units in the path. This causes
>unwanted battles as your units try to move throught squares with enemy
>units. The computer players may have the same problem. Actually I think
>that many times the computer attacks your units outside your cities it
>isn't planning an attack but just stumbles into same square.

One of the most frustrating problems occurs on enchanted or Myrran roads.
Since they cost no MP, the path generator often has your units move
through a totally unnecessary road square even when you are moving only
one square at a time. I recall a game where Sss'ra had a lone settler on
a road outside his capital, and the program would not allow me to move my
assault force from an adjacent non-road square into the city without going
through that stupid settler. I had to either use one of my units to
remove the settler and attack with the rest, or else delay the whole
attack for a turn.

>Computers units paths seem not to be revised after once set. You can
>notice this by taking a neutral city towards which computer has already
>launched an attack (that means started moving troops towards, the actual
>battle can occure several turns later). The computer will not realise the
>fact that the town isn't neutral anymore and will attack regardless of
>diplomatic status. However this attack doesn't seem to have an effect on
>diplomatic relations. Another example of this is that after taking a
>computer's town there often attacks single, wounded units. I suspect that
>they were on their way to get repaired in the city and does not realise
>that it has changed the ownership.

I have often had a city attacked by enemy engineers who started building a
road into the city while the computer player still owned it, and didn't
change their orders after I took the place. Of course this was pointless
anyway since a city square counts as a road.

10.6) What are the "puns" in the weapon/artifact names?

   Here are the ones we've noticed:

          Jan's Hammer   wrote songs for Miami Vice & Beverly Hills Cop
          Protection of Ramses   Don't leave home without it!
          Gauntlet of Eastwood   One of his movies.
          Shield of Brooke   Her relationship with Michael - purely platonic
          Monster Masher   Remember the song?
          Bow of Hazard   Have to be a Duke to use it.
          Mail of Diversity   Politically correct!
          Purple Rain of Death   Have to be formerly known as a prince for this
          Vans Shield   Oddly vulnerable to flying pebbles.
          The Wind Shield   Ditto.
          Suit of Power   Dress for success.
          Mail of Pobox   It delivers.
          Kraken Wand   Don't stand down wind.
          Idspispopd   Doom cheat that lets you walk through walls...
          Peppermace of Gates   (Something to do with Bill? I don't get it...)

                                                                     [BLJ]

     10.7) What is a good score?

        Note: All scores here are using MOM v1.31.

        Hard, Four, Halflings, using Adamantium slingers and heroes with Summon
        Champion, scored 67%.   [sca@advge.magwien.gv.at]

        Impossible,4,normal magic,medium land. Halflings used mostly for slinger
        troops. Alchemy for mana. Artificer to equip my heroes. Sorcery Mastery
        for bonuses. 3 life books, 5 sorcery books. Score:

           81 spells   + 81   848 people   + 424 (could have done more here)
           4 wizards ban. + 200   322 fame   + 644
           year 1433   +1190   spell of mast. + 250
                   TOTAL = 2789*3 = 8367 (/8000 =)   Score: 104%

        Impossible,4,powerful magic,large land. Halflings used mostly for slinger
        troops. Artificer to equip my heroes. Sorcery Mastery and Archmage for
        bonuses. 3 life books, 5 sorcery books. Score:

           89 spells   + 89   1045 people   + 522
           4 wizards ban. + 200   463 fame   + 926
           year 1442   + 980   spell of mast. + 250
                   TOTAL = 2967*3 = 8901 (/8000 =)   Score: 111%
                                             [rainbow@apxws48.ih.att.com (Rob Buchner)]

        Impossible, 4, powerful magic, large land. High Men, 11 Sorcery, Flying
        Warships. I survived the early stages of the game only because I ended up on
        a sub-continent by myself, while the other 3 Arcanus wizards shared the main
        continent. They fought among themselves and I ambushed Myrror. Taking over
        Arcanus was then easy with 2 stacks of 7 War Trolls and Sorcery. Impossible
        level helps your score because you get a lot of fame defeating the numerous
        large stacks your opponents throw at you. Could have finished years sooner
        but I like to take out every node and lair. Had to make some Adamantium
        Paladins to get four tough nests of Sky Drakes. Built a lot of Halfling
        cities, because I wanted to have a population over a million.

           67 spells   + 67   1084 people   + 542
           4 wizards ban. + 200   288 fame   + 576
           year 1430   +1276   spell of mast. + 250
                   TOTAL = 2911*3 = 8733 (/8000 =)   Score: 109%

        Score improvement tips:

        Always try to hunt out all the opposing stacks with 4 units or more.
        (Defeating four or more units gives one fame, worth 2 score points.)

        Legendary heroes contribute to your fame, and every point of fame converts to
        2 points of score.

        With Nature magic you can really get your population up there, if you take
        the time. However, it is incredibly tedious.

        The score for the year starts at 2000, then two points are deducted per turn.
        Each turn is the equivalent of one month.

        Lastly, the scoring system is such that you'll probably never get 100% at
        normal level, or hard for that matter. Each level has a multiplier:
        impossible: 3, hard: 2, average: 1, easy: 0.75 or simple 0.5. The point
        total times multiplier is then divided by 8000 to get the percentage.

```
        [rainbow@apxws48.ih.att.com (Rob Buchner), BLJ,
         MOM Official Strategy Guide, benton@malibu.sfu.ca (Brent James Benton)]

   Many people don't care about their score and do things that hurt their score
   (raze cities they don't like, don't bother with Spell of Mastery), or don't
   do things to improve their score (build every city possible).  There is a lot
   of fun in experimenting with new things, hard fought battles, bitter revenge,
   amassing awesome power, etc.  If you're having fun, why worry about the
   score?
                                                                         [BLJ]



   --------------------------------------------------------------------------------
   10.8) What advantages do the computer players have on impossible level?
   --------------------------------------------------------------------------------

            - Computer players automatically know where your fortress is.
                                              [cinnamon@one.net (R. N. Dominick)]
            - Rampaging monsters will go right past a computer player city and
              head for your city.
            - Computers players get an extra, "unearned" powerbase of 20 or
              30 mana.
            - Computer players are able to have large armies without the food
              necessary to sustain the army.
            - Computer players have spell skill and mana reserves that are higher
              than should be possible.  (Might have been a bug - I don't think
              this always happens????)
            - They also may be able to buy more units than they have money
              to buy.
            - Enemy wizards get extra starting picks (more than the 11 you get).
              On hard they get 13 picks, on impossible 15.
            - Computer player outposts turn into cities at 3x the normal rate.
            - Computer players only pay 50% maintenance on units.

            . . . and others . . .

   The MOM Official Strategy Guide contains a lot of information on this topic.

                                        [BLJ, others, MOM Official Strategy Guide]



   --------------------------------------------------------------------------------
   10.9) Diplomacy: I can't keep peaceful relations with the other wizards.
   --------------------------------------------------------------------------------

   Then kill them.  Seriously, though . . .

   On impossible level, diplomacy is an utter waste of time.  Giving spells to
   your opponents accomplishes nothing except advancing their research.  The
   Charismatic retort is basically worthless.
                                        [dtebben@alumni.caltech.edu (Dirk Tebben)]

   [Note: Pre 1.3, diplomacy may be harder now...]
   Well, I'm playing a game currently where I've had 'peaceful' relations with
   two of the other wizards, and constant warfare with the third.  The main
   factors seem to be that I share no continents with any of them, Rjak, the
   one I'm at war with does Death magic while I do life (although mostly
   sorcery).  The other two (Merlin, Horus) also are at least partial life
   magicians.  One thing I've done different this game is pay pretty regular
   attention to the diplomatic situation: any time one of the other wizards
   ceases to be at war with Rjak, I convince him to attack and resume the war,
   before Rjak gets him to attack me.  Has worked for quite a long time now.  In
   past games, I haven't paid much attention to their relations, but I think I
   should.  Don't let them get too friendly (if you can have any influence) and
   perhaps they won't talk each other into attacking you.  Then again, maybe
```

```
          it's a fluke...
                                              [jeffl@hood.pcx.ncd.com (Jeff Longueil)]

      A note on diplomacy. The stronger you get, the more difficult it will be
      to maintain good diplomatic relations with the other wizards and the more
      likely they will be to delcare war on you. They will not allow you grow
      strong unchecked.                                  [The 1.31 README.TXT File]

      Actually, Diplomacy seems easier on v1.31.  Unless I am playing heavy Death
      magic I can usually stay at peace with my (non-Chaotic) opponents until I'm
      ready to start (and finish) a war.              [Brian Wade (FLEBO@AOL.COM)]

      Stomping on an enemy outpost apparently incurs no diplomatic penalty!
                            [MOM Official Strategy Guide, danhite@aol.com (Dan Hite)]

      You can maintain diplomatic relations with other wizards if you make no troop
      movements (or make sure you don't tread on enemy ground or near enemy troops,
      and that does include them approaching you), build no cities which compete
      for land, and keep your troops inside your city.  Spell exchanges also help,
      especially if you give a spell that costs more research than the one they
      give you.  In the early stages, they'll ignore you.  This gives you time to
      build the troops you want, equip your heroes with items, or learn some
      crucial spells.  Meanwhile the other wizards are greatly increasing in power,
      so you better have a good strategy to counter their power increase, otherwise
      it's not worth the price of maintaining diplomatic relationships.  You need
      to expand to increase power.  If you're lucky one or two wizards will have
      peaceful non-expansion tendencies, if you don't attack them, they won't
      attack you. Just stay away from them.

      If you can't handle the constant warfare right from the start with your
      initial selections, try playing on small land masses.  It will take a while
      before you're in conflict/touch with any of the other wizards.  Plus it slows
      down their fast expansion.  Since they start off with such advantages, this
      minimizes the multiplying effect.
                                              [rainbow@apxws48.ih.att.com (Rob Buchner)]


      -------------------------------------------------------------------------------
      10.10) How important is starting race on impossible level?
      -------------------------------------------------------------------------------

      Choice of starting race isn't all that important, since you'll often
      immediately get 2-3 other races from neutral villages.  Therefore, my #1
      criterion for choice of an initial race is growth rate, which puts Barbarians
      on top.  Of course if you're playing Life, Halflings can be awesome simply
      because of slingers.              [dtebben@alumni.caltech.edu (Dirk Tebben)]

      I disagree: I often find that all or almost all the neutrals are the same
      race! Furthermore, sometimes the neutrals will be something like klackons,
      or lizardmen: while they may have some use, you won't want to found too many
      new cities with them. Therefore, it is important that your own race be one
      that you are willing to play out by itself. The few games that I played
      Barbarians, I lucked out and got High Men or Nomad neutrals - but I could
      just as well have gotten Gnoll or Klackon neutrals and been royally screwed.
                                        [jrk3g@darwin.clas.Virginia.EDU (Jeffrey Robert King)]

      An island/continent has a default race.  Each city has a 75% chance of having
      that race.                                  [BLJ, MOM Official Strategy Guide]

      Starting race is quite important.  If I take a race which can't produce
      missile units or magic range attacks, I quickly become a tasty lunch morsel.
      A flying unit is also rather crucial.  Growth rate is totally insignificant,
      if you can't build troops to defend your outposts and hamlets, you'll lose
      them.  If you get lucky, a neutral city may fill the troop void.  But if you
      get unlucky...                      [rainbow@apxws48.ih.att.com (Rob Buchner)]
```

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     ------------------------------------------------------------------------
     10.11) Hero List for Master Of Magic:
     ------------------------------------------------------------------------

        I have found out that some characters get the super ability at the
        cost of a random 'pick' (choice of Lucky, Noble, Con, Might, and
        others). Some characters get a lot of free picks. On the whole most
        characters get 1-3 set abilities, and 2 picks.

        Some of the 10 upkeep Heroes require at least ONE spell book of the
        given color, I have listed them as a color after the number of random
        picks.

        I do not know if the picks vary because of Starting Race, or Spell Books,
        I think they are just random (makes more sense to me)

        The Uk column indicates gold upkeep (or mana in Torin's case).
        The Upkeep 10 heros are the champions.

        Name          Title       Uk Me Ra Df Re HP Specials
        --------------------------------------------------------------------
        Brax          Dwarf        2  5  -  4 10 10 Const, Mount
        Gunther       Barbarian    2  5  -  3  6 10 Might, Thrown 3
        Zaldron       Sage         2  1 6m  4  6  5 Sage, Cast 7.5
        B'Shan        Dervish      2  4 4a  4  6  6 Noble
        Rakir         Beastmaster  2  5  -  4  6  7 Cast 5, Scout 3, Forest
        Valana        Bard         2  4  -  5  6  6 Cast 5, Leader
        Bahgtru       Orc Warrior  2  5  -  4  6  8 Mount, Thrown 3, [1 Pick]
        Serena        Healer       2  3 6m  5  7  5 Cast 7.5, Healer, [1 Pick]
        Shuri         Huntress     2  5 4a  3  6  7 Blade, Pathf, [1 Pick]
        Theria        Thief        2  5  -  6  6  7 Agl +1, Charmed
        Greyfairer    Druid        3  1 8m  5  6  7 Cast 7, Scout 3, Purify
        Taki          War Monk     3  6  -  5  6  6 Agl*, [1 Pick]
        Reywind       Warrior Mage 3  4 4m  5  6  7 Cast 5, [1 Pick]
        Malleus       Magician     3  1 7m  5  9  5 Arcane, Cast 10, [1 Pick],
                                                    Flame Strk Spell
        Tumu          Assassin     3  3  -  5  6  6 Blade, Poison 5, [1 Pick]
        Jaer          Wind Mage    4  1 6m  5  6  7 Cast 7, Windw, [1 Pick]
        Marcus        Ranger       4  6 5a  5  6  8 Scout 2, Pathf, Might, Cast 5
        Fang          Draconian    4  7  -  5  6  8 3 fly, Fire 5, Might, [2 Picks]
        Morgana       Witch        4  1 8m  5  6  5 Charmed, Cast 10
        Aureus        Golden One   4  6 6m  7  6  6 Caster 5, [2 Picks]
        Shin Bo       Ninja        6  6  -  5  6  7 Invis, Blade, [2 Picks]
        Spyder        Rogue        6  7  -  5  6  8 Leader, Legend*, [1 Pick]
        Shalla        Amazon       6  7  -  4  6  8 Charmed, Thrown 4, Might, Blade,
                                                    [1 Pick]
        Yramrag       Warlock      6  1 8m  5  9  5 Cast 15, [1 Pick]
        Mystic X      Unknown      6  5 5m  4  9  8 Caster 5, [5 Picks]
        Aerie         Illusionist 10  1 6m  4  6  5 Illusion, Cast 10, [2 Picks],
                                                    BLUE
        Deth Stryke   Swordsman   10  5  -  4  6 10 Arms, Const, Might, Leader,
                                                    Legend, [1 Pick]
        Elana         Priestess   10  2 7m  5  6  5 Heal, Purify, Cast 12.5, Pray*,
                                                    Charmed, Noble, Arcane
        Roland        Paladin     10  9  -  5  6  8 Magic Im, AP, First Strike,
                                                    Heal, Legend, Pray, Might*,
                                                    [1 Pick], WHITE
        Mortu         Black Knight 10 9  -  5  6 10 Magic Im, AP, First Strike,
                                                    Might, Const, Blade, Legend,
                                                    [1 Pick], BLACK
        Alorra        Elven Archer 10 5 8a  6  6  6 Forest, Blade, [3 Picks]
        Sir Harold    Knight      10  8  -  5  6 10 Leader*, Leg*, Const, Noble,
                                                    [1 Pick]
```

```
    Rayashack      Necromancer    10 1  8m 5  6  5  Arcane, Cast 12.5, Life Steal,
                                                     [2 Picks],BLACK
    Warrax         Chaos Warrior 10 8  8m 5  8  8  AP, Cast 10, Arcane, Const,
                                                     [3 Picks]
    Torin          Chosen         10 12 -  7  12 12 Cast 15, Magic Im, Pray, Might*,
                                                     Const, Leader*, [2 Picks],
                                                     Summon by rare White Incarnation
                                                     spell

                                              [Dana Huyler c569836@cclabs.missouri.edu, DC]

    Spells known, direct from wizards.exe (non-casters omitted):

    Sage             Dispel Magic True, Counter Magic
    Beastmaster      Resist Elements
    Bard             Confusion, Vertigo
    Healer           Healing
    Druid            Ice Bolt, Petrify, Web
    Warrior Mage     Eldritch Weapon, Shatter, Flame Blade
    Magician         Fire Bolt, Fireball, Fire Elemental, Flamestrike
    Wind Mage        Guardian Wind, Word of Recall
    Ranger           Resist Elements, Stone Skin
    Witch            Darkness, Mana Leak, Posession, Black Prayer (see below)
    Golden One       -
    Warlock          Lightning Bolt, Warp Lightning, Doom Bolt
    Unknown          -
    Illusionist      Psionic Blast, Vertigo, Mind Storm
    Priestess        Dispel Evil, Healing, Prayer, Holy Word
    Elven Archer     Resist Magic, Flight
    Necromancer      Weakness, Black Sleep, Animate Dead, Wrack
    Chaos Warrior    -
    Chosen           True Light, Healing, Holy Armor, Lionheart (see below)
```

I've seen all of these spells in their spell books except for two cases:
The Chosen actually gets NO spells other than what the controlling wizard
knows, apparently due to a bug, and I've never seen the Witch get any extra
spells at all, ever, in all the times she's cast spells for me. I would've
thought I'd have noticed if she could cast Black Prayer!   [DP]

Races of heroes (no effect on the game except for the Chosen who benefits
from a True Light spell but NOT from leadership or Metal Fires):
Dwarf, Barbarian, Orc Warrior and Draconian: obvious. Beastmaster =
beastman, Elven Archer = High Elf, Chosen = Life. All others = High Men.[DP]


```
    -------------------------------------------------------------------------------
    10.12) How can I get MOM to run on OS/2?
    -------------------------------------------------------------------------------
```

Open a DOS full-screen window, type PROMPT pg (to get rid of the
legend that blocks the top line of the screen), try to run MAGIC.EXE, and
see what error message you get.

Chances are it will say you don't have enough expanded memory. You need
at least 2700KB of EMS.

If that's what it says, go to the DOS settings in the program object
that you use to launch MoM and set the EMS_MEMORY_LIMIT to, say, 3000,
to give yourself a little leeway. Try again.

If it says something else, post another article telling us what message you
get, and we'll try to think of a possible fix.
                                              [dww@world.std.com (David W. Walker)]

        DOS_FULLSCREEN=ON

```
            DOS_BACKGROUND_EXECUTION=OFF
            DOS_HIGH=ON
            DOS_RMSIZE=640
            DOS_UMB=OFF  ; exception-if you run into a rare game that will use
                         ; UMB's
            DPMI_MEMORY_LIMIT=0
            EMS_MEMORY_LIMIT-2048  ; exception- make this 0 if your game
                                   ; does not require
            or will not use EMS
            HW_ROM_TO_RAM=ON
            HW_NOSOUND=OFF
            HW_TIMER=ON ; exception- Colonization did not seem to like this
                        ; setting.
                        ; I also have it OFF, because I run a BBS in another
                        ; session. This setting appears to negatively impact the
                        ; BBS
            IDLE_SECONDS=10
            IDLE_SENSITIVITY=100
            INIT_DURING_IO=ON ; this is -required- for decent performance of most
                              ; multi-media games
            KBD_ALTHOME_BYPASS=ON
            VIDEO_FASTPASTE=ON
            VIDEO_RETRACE_EMULATION=OFF
            VIDEO_ROM_EMULATION=OFF
            XMS_MEMORY_LIMIT=64 ; exception- if your game will use XMS but not EMS
                                ; make the EMS setting 0, and this setting 2048.
                                ; For games that use either, XMS appears to work
                                ; better.
```

   Here's a line to add to your config.sys. It's probably already there, just
   change the setting to no.

```
            PRIORITY_DISK_IO=NO
```

   Hope this helps!!   [microprose3@delphi.com (Quentin Chaney)]

   10.13) Manual Corrections

   MOM has changed a lot since the manual was printed. Listed here are some of
   the manual corrections. Many of these were lifted from the 1.31 patch
   README.TXT file, which you should read. Note: To access the on-line help,
   right click on the related spot on the game screen.

   - We recommend that you not load games saved from a previous versions of MOM.
     In other words, if you are running 1.31, we recommend not using a game
     saved from 1.3 or 1.2 or earlier. They might work fine but we cannot
     guarantee it. (p. 5)

   - Your wizard's fortress generates magic power equal to the number of
     spellbooks selected when the game begins (instead of the base 5). (p. 14)

   - Changes to Wizard Special Abilities (pp. 15-17)

      * Alchemist gives all of your normal newly built units +1 magical weapons,
        as if an alchemist's guild were present in all of your cities.
      * Archmage gains a 50% bonus on mana spent on increasing spell casting
        skill.
      * Artificer reduces the cost of creating magical items by 50%.
      * Channeling special ability now reduces maintenance for all summoned
        creatures by 50%, in addition to eliminating the range penalties for
        casting combat spells away from your fortress. The Channeling ability
        costs 2 spell picks.

     * The Chaos Mastery, Sorcery Mastery, and Nature Mastery abilities now give
       the wizard a +15% bonus to his research and casting of spells of the
       appropriate realm, instead of +10% just to researching.
     * Conjurer's 25% bonus now applies to research of summoning spells,
       maintenance costs of summoned creatures, and casting cost for all
       summoning spells.
     * Famous now starts you with 10 fame.
     * Myrran now costs 3 picks. A Myrran's magic fortress produces 5 extra
       mana.
     * Node Mastery makes you immune to having your spells dispelled (fizzled)
       while in a node.
     * Runemaster doubles the wizard's chance to dispel another wizard's
       enchantment, instead of making the runemaster's spells harder to dispel.

  - Guaranteed spells have been eliminated. Instead a wizard may select one
    common spell for each book he picked above one when the game begins.
    Wizards who select 11 picks begin with all common spells, and can pick 2
    uncommon and one rare spell. (p. 17)

  - If you "Quit" the game saves before Quiting. (p. 26)

  - The surveyor will indicate what you have found out about the inhabitants of
    a lair or node. It will also tell you the type of spirit (Guardian or
    Magic) is inhabiting any owned nodes, and whether or not they are warped.
    (p. 36)

  - The default tax rate is 1 gold per townsfolk with a 20% unrest rate.
    (p. 40)

  - The Tax Rate (Unrest) display is different than what is shown on p. 41.

  - A left mouse click on any resource on the city view screen will give a
    complete accounting and breakdown of resource production. (p. 55)

  - A note on diplomacy. The stronger you get, the more difficult it will be to
    maintain good diplomatic relations with the other wizards and the more
    likely they will be to delcare war on you. They will not allow you grow
    strong unchecked. (p. 71)

  - There is a limit of 1000 units allowed in the game. This means that if the
    other wizards have managed to recruit 950 units, you can recruit at most
    50. When there are 1000 units, any attempt to build another unit will
    cause a warning message to appear. (p. 75)

  - An asterisk that follows a hero's special ability (in the hero's stat
    display) indicates a super rating which typically gives 50% additional
    benefit. (p. 81)

  - Wizards lose 1/2 fame point per level of heroes slain in battle. (p. 82)

  - Units with life stealing also attack with their normal melee attack.
    (p. 84)

  - Non-corporeal units are unable to use the enchanted road bonus. (p. 85)
    However, non-corporeals move over all at .5 cost per square.

  - Pathfinding allows all units within the stack to move on land squares as if
    they were roads. (p. 85)

  - Teleport only costs 1 movement point in combat. (p. 86)

  - Units may only fire 1 missile attack each turn. Firing a ranged attack ends
    the unit's turn. (p. 98)

  - A conquering wizard may now chose to raze a city, totally destroying the

        town and slaying all of its occupants. The razing wizard then receives 10%
        of the original cost of all buildings within the city, but loses 1 fame per
        size of the city, i.e. 1 fame for a hamlet, 2 for a village, 3 for a town,
        etc. (p. 101)

    - You will be rewarded with either one or two spells for banishing an enemy
      wizard. However, both of you must have similar types of magic for this to
      happen. If, for example, you have only death magic and your vanquished foe
      has only life magic, don't expect any spell discoveries. (p. 101)

    - You are awarded 5 fame points for defeating an enemy wizard. This is in
      addition to fame points gained for defeating his fortress city. Note: you
      are not notified of this award in the game, but they show up on your
      player summary F9 Info/Mirror. (p. 111)

    - The manual talks about "all" wizards declaring war on any wizard attempting
      to cast the Spell Of Mastery. However, this doesn't seem to happen.
      (p. 111)

    - Draconian standard units now fly at a speed of 2. (p. 115)

    - Gnoll units cost the normal standard unit costs for spearmen, swordsmen,
      bowmen, halberdiers, and settles. (p. 115)

    - Halflings standard units cost 150% normal. Halflings no longer have a +1
      defense, but due to the Lucky bonus, each shield represents a 40% chance
      to stop a hit of damage. (p. 115)

    - Units with mountainwalk capability move across grasslands at half rate.
      For example, Brax a hero with mountainwalk and a normal movement of 2,
      can only move 1 square per turn across grasslands. (p. 118)

    - Desert map squares cost one movement point to cross. (p. 119)

    - Trade Goods do not benefit from bonuses from any other source (such as
      Marketplace, Bank, etc. in a city. (p. 122)

    - Changes to summoned creatures: (pp. 136-142)
        * Angel defense is 7.
        * Arch Angel defense is 10.
        * Behemoth defense is 9.
        * Chaos Spawn defense is 6.
        * Chimera defense is 5.
        * Colossus defense is 10.
        * Death knight's now have a h-to-h attack strength of 9, and 8 defense.
        * Demon lord now has a -5 save to life stealing attack, and 10 defense.
        * Djinns now have wind walking, have defense 8, and are very rare
          creatures.
        * Efreet defense is 7.
        * Great Drakes now have a 30 hand-to-hand attack strength, a 30 strength
          breath weapon, and a 10 defense (or 9?).
        * Great Wyrm defense is 12.
        * Sky Drakes are now very rare creatures, and have 10 defense.
        * Stone Giant defense is 8.
        * Storm Giant defense is 7.
        * Wraith defense is 6.

    - Changes to units: (pp. 131-135)

        * Air Ships no longer take passengers. They are just weapons. (p. 131)
        * Berserkers have a 7 hand-to-hand, 3 defense, 3 thrown, 7 resistance, and
          cost 120gp.
        * Dragon Turtles (Lizardmen only) require a stables and an armorer's guild
          to build.
        * Galleys have a 4 defense and an 8 ammo, strength 2 range (arrow) attack.

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        * Hammerhands now have a 4 defense.
        * Magicians have a strength of 5.
        * Magicians: High Men Magicians have 6 figures.
        * Magicians: High Elf Magicians have speed of 2.
        * Nightmares now only have 2 figures.
        * Rangers have speed 2.
        * Triremes have a 4 defense.
        * Warlocks now only have 4 figures, and a strength of 7.
        * Wolf Riders (Gnolls only) move 3 and have a 7 attack strength.

    - Armageddon causes rebellions (unrest).  However, the rebellions have been
      reduced (not entirely eliminated) in MOM v1.31. (Spellbook p. 4)

    - Clarification: all animated dead units cost 50% more mana to maintain than
      the creature's cost before becoming undead, regardless of how the creature
      become undead ( ghoul, demon lord drain, life drain spell, animate dead
      spell, etc.).   (Spellbook p. 4)

    - The manual always said Corruption eliminates food production in the
      affected terrain, but this didn't work until recently (MOM v1.31?).
      (Spellbook p. 9)

    - Disjunction spell now has a base cost of 200.  (Spellbook p. 12)

    - The Dispel Magic True, Disenchant True, and Disjunction True spells all
      dispel with a strength equal to 3 times the mana spent on casting the
      spell. (Spellbook pp. 12-13)

    - The Enchanted Road bonus does not apply in combat.  Flying units can (now)
      use the enchanted road bonus.  Non-corporeal units are unable to use the
      enchanted road bonus.  (Spellbook p. 15)

    - Gaia's Blessing won't increase city size above 25.  (Spellbook p. 18)

    - Great Unsummoning now has a -3 resistance penalty.  (Spellbook p. 19)

    - Great Wasting causes rebellions (unrest).  However, the rebellions have
      been reduced (not entirely eliminated) in MOM v1.31. (Spellbook p. 20)

    - Guardian Wind has become a common spell and costs 10 mana to cast in
      combat, 50 mana overland.  (Spellbook p. 20)

    - Guises has been eliminated as a spell, and replaced by Blur.  The Blur
      spell is uncommon sorcery and covers all of your units in a veil of wispy
      illusion, making it very difficult to see the exact positions of the
      protected units. As a result, all hits inflicted against the blurred
      creatures have a 10% chance of just missing. Blur is a global combat spell
      and costs 25 mana to cast. (Spellbook p. 20)

    - The Holy Weapon spell now costs 10 mana to throw in combat, 50 overland.
      (Spellbook p. 22)

    - Just Cause reduces unrest by 1 in all cities.  (Spellbook p. 20)

    - The Starfires spell only costs 5 mana to throw.  (Spellbook p. 33)

    - Volcanos have a 2% chance to revert to mountains each turn (with a 5%
      chance of providing a mineral vein).  (Spellbook p. 30)

    - The Weakness spell is no longer automatic and requires a save, but the
      spell does have a -2 resistance penalty.  (Spellbook p. 37)

    - Windwalking spell now has a maintenance cost of 10 mana.  (Spellbook p. 38)

      [MOM 1.31 patch README.TXT, cox@tachyon.unx.sas.com (Jim Cox), BLJ, others,
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                          jrk3g@darwin.clas.Virginia.EDU (Jeffrey Robert King)]

    10.14) The Best Way to Dispel Enemy Incantations

    In my games, I've often wondered: would I be better off trying one large
    attempt at dispelling something or several smaller shots at the same thing.
    The book gives your odds of dispelling as (Dispel_Cost/(Casting_Cost +
    Dispelling_Cost). Since they were nice enough to provide the formula, an
    answer to this question is easy to work out.

    It turns out that in terms of percent chance of eventually getting rid
    of the spell, you are better off breaking the attempt into several
    smaller ones. For example, if the spell you are trying to get rid of
    cost 200 and you try to get rid of it using 200 your odds are
    200/(200+200) = 50%. If you break that into two attempts of 100 each then
    each attempt has a (100/200+100) = 33.33% chance of working. Together,
    this gives you a 5/9ths = 55.55% chance when the two are combined.

    A further advantage is that if you happen to get it on the first attempt,
    you save all that Mana.

    Four attempts at 50 equals 59% (20% + 16% + 13% + 10%). Based on probability
    alone, smaller is indeed better. On average you will spend less time and
    less mana. All in all, the more mana you throw into the dispel, the less
    bang for the buck you get on that attempt.

    Another factor to consider, your spell skill. If your spell skill is 50,
    a 200 dispel ties up your spell casting ability for 4 turns. If instead you
    do four 50 dispels, your odds are better, you may save mana, and the odious
    enchantment may be gone sooner. One last factor. Little spells can't be
    blasted.   [rainbow@apxws48.ih.att.com (Rob Buchner), BLJ, Dave Chaloux, DC]

    Other things to consider are:

    1. Sorcery's "True" versions of the dispels get three points towards
    dispelling for every mana point spent. In the above examples, you would have
    only needed to spend 67 mana if you had the "True" versions to get the same
    results.

    2. Dispel Magic and company will often remove more than the enchantment
    you were really concerned about (but it will never be detrimental to the
    caster). Say the target had 5 enchantments on it and you really wanted to
    get rid of one of them. The dispel may fail to get rid of the one you really
    wanted removed, but may get rid of a few of the others.

    3. Spell Blast always works (in my experience, anyone beg to differ?). The
    catch is you have to blast it before it is finished casting (Detect Magic
    comes to mind).

    4. The Area versions of Dispel Magic (Disenchant Area) will affect all units
    and city (if there is one) in the target square or the battlefield. This can
    be a real bargain. Remember that it only works on spells detrimental to your
    cause (beneficial spells on enemies, detrimental spells on your units).

    5. Think creatively. Dispel Area can strand or incredibly weaken a whole
    enemy stack.

    6. Protect yourself from dispelling (and banishment) by Spell Lock.
    This is a continuous 150 (I think, check it yourself) point dispel magic
    field against dispelling magics (did that make sense?).

    7. Countermagic and related spells (Tranquility comes to mind) are preventive

   Dispel Magic spells and can be quite useful.

   8. Nightshade is a free Dispel Magic (I'm not sure how many points) for your
   city. When possible build your cities near it.

   9. Spell Bind is a good alternative to Disjunction is you are a really good
   Sorcerer.

   10. Some special abilities make your spells harder to dispel (Sorcery
   Mastery, Archmage, etc.). Take this into account when you guess how much
   mana to spend. These bonuses are cumulative.

   11. If you are a Runemaster, the mana you put into a dispel counts double.
   Abusive dispeller: A Runemaster casting "True" dispels at 6x the mana spent!
                                             [Brian Wade (FLEBO@AOL.COM), DC, BLJ]

10.15) MOM is too easy. Make it harder!

   Haven't heard this complaint much since 1.3 and 1.31 came out. But, just in
   case MOM is getting too easy, here are some suggestions.

10.15.A) Don't use heros, mercenaries or monsters

   No heros, No mercenaries, No summoned monsters.
                                             [LeeCole@cybernetics.net (Lee Cole)]

10.15.B) Hard race - lizardmen

   I'm working towards playing with the lizardmen (klackons might also be good
   here) and life books. Good because you don't have any good summoned
   creatures to fight with, and the only troops you have worthwhile are the
   spear-chuckers. But they seem to do okay with experience (maybe too good?).
   Charismatic is a good retort here. Maybe famous too (I must admit that I'm
   playing with Alchemy now and Mana Focusing, but I'm working toward
   Charismatic in later games). I figure if you can win an impossible level of
   1.31 with such a setup, you're doing something right besides just choosing
   a fortuitous setup.
                                             [Cory Czarnik <czarnik@engin.umich.edu>]

   To make a hard race harder - raze all cities that do not belong to your
   starter race.   [jfardal@infinity.ccsi.com (John Fardal), BLJ]

10.15.C) Harder race: Klackons

   Klackons seem tailor made for a hard game. They inspire unrest in everything
   you conquer. They can't build a research building better than a library
   or religious institution better than a shrine. No units with a ranged
   attack! They even grow slowly!   [BLJ]

   And give them Infernal or Divine Power.   [Brian Wade (FLEBO@AOL.COM)]

10.15.D) Harder magic: Marginal talents and Death

   Pick a bunch of marginal talents such as Runemaster, Mana Focusing, etc and
   then go with death magic alone. Your only real talent with Death Magic is to
   mess up his cities a bit (cursed lands, famine, evil presence, pestilence).
   Your combat spells are weak since they seldom work on the tougher units the
   computer will field in the middle game and beyond, and you can't improve your
   citys or troops as much as the other spell types.
                                               [cptstern@Cyberquest.com (Capt Stern)]

10.15.E) Even harder: Marginal talents, Death, and Gnolls

   Try 6 Death books + useless wizard skills (not Warlord, Alchemy,
   Myrran etc), choose Gnoll as main race, play on impossible level. Now
   that'll be a challenge if you happened to miss the Wraith spell!   :-)
                                               [hkchan@hkchan.pc.my (Chan Hoong Keong)]

10.15.F) Even Harder: Nature

   Death magic is not that bad. Life drain and mana drain are powerful common
   spells. Death also has awesome summoned creatures, in particular shadow
   demons, wraiths, and death knights (in concert with black prayer). They
   steal life and regenerate faster than taking damage. Lycanthropy and
   Wraithform are also quite useful spells, particularly early in the game.

   If you really want a hard game - pick Nature with useless retorts instead of
   Death. And just try to Web your way to victory.
                                               [rainbow@apxws48.ih.att.com (Rob Buchner), BLJ]

10.15.G) Very Hard: Cast NO SPELLS AT ALL

   I'm expecting to win a game (4/Impossible) with Barbarians (and I captured
   some High Men) in which I am casting NO SPELLS AT ALL. I do have alchemy and
   use it, and I let myself conquer cities, but I only let myself take over
   enemy capitols when they are down to two cities. I've banished two
   wizards this way - they both cast SOR so I'm leaving them each a city to
   see if they make it back. Note since I cast no spells I can't meld with
   nodes or un-meld them from theirs. Also, I don't allow myself to build
   Paladins. Just Berserkers, Bowmen, Barbarian Swordsmen, and a few
   Pikemen, engineers, etc. I have a couple of leader heros, and I let them
   use captured magic items (most are real lame). Of course I have no
   fantastic creatures or creature enchantments. I'm winning quite handily
   with Berserkers and Bowmen, thank you.
                                               [skarg@eskimo.com (Peter VonKleinsmid)]

10.15.H) Very Very Hard game: limit yourself to one city

   Anyone else up for a challenging style of play?!?! Don't know how many of
   you do this, but I find that playing with only ONE city is a good way to
   challenge yourself - on the levels other than impossible that is... The
   only cities I keep are those that contain a wizards tower, I.E. a banished
   wizard. Although this is difficult, it is also advantageous. You have one

      heckuva stronghold! Anyone (everyone) else tried this?
                                        [jharmon@Mesa.Colorado.EDU (jack harmon)]

   10.15.I) Fantasy Hard Game

      Limit yourself to one city. Your race: Klackons. Impossible, 4, large,
      on MOM 1.31, of course. No heroes, mercenaries, or summoned creatures.
      The talents that do you no good: Charismatic, Artificer (cruel since you
      can't use heros), Channeler and Conjurer (cruel since you don't cast spells
      and summon creatures), Alchemy (cruel since you are not using magic).
      If you have any spell picks left, put them in Nature. Cast no spells at all,
      except Spell of Mastery. Now if you can win with this setup, yes MOM is just
      too damn easy. (Note - I'm kidding! But now I'm wondering - just how far
      could you get?)   [BLJ]

      While you're at it give them bugs Infernal Power. (Hint, 1.5 x Shrine = 1
      mana and 1 rebel squashed, a real bargain for 2 picks).
                                                     [Brian Wade (FLEBO@AOL.COM)]

      "I made a couple modifications to the setup. For one thing, Alchemy means +4
      gold/turn and +1 to-hit on all your units (Klackons can't get Alchemists
      Guilds,) and Charismatic gives you diplomatic bonuses, so I axed them in
      favor of more spellbooks. I gave myself a totally useless wizard. Oh, and I
      set the magic nodes to "powerful," which you didn't specify but seems natural
      given that only the enemies can take nodes.

      "Long story short, I built an army of Stag Beetles, marched to each other
      wizard's empire, and slaughtered everybody. The only place where I gave
      myself what might be considered an unfair advantage is when I restarted a few
      times to get a good starting city (in this case, it had two gold mines and a
      wild game.)

      "After each wizard, I was completely expecting the next one to have become
      much more well-prepared in the time I spent, but no. The last one, Jafar (who
      was Myrran in this game) did have much greater forces than his
      contemperaries, but it was mostly in Fire Giants, Doom Bats, and low-level
      heroes, all of which die fast to Stag Beetles. His Psionic Blasts and Air
      Elementals wore out and killed my first invasion force, so I raised seven new
      beetles and went straight to his capital.

      "I suppose, when you picked large landmasses, you were intending that it give
      the enemies room to expand, while the player, by definition, can't? In
      hindsight, it seems like it would have been a better idea to pick small
      landmasses - the enemy doesn't need the ridiculous levels of production that
      large can give them later on to beat you, and water stops high-end-normal-
      unit rushes.

      "I also reckon that Klackons aren't the best race pick, and here's why: as
      far as I can tell, starting with Klackons means that a lot of the cities near
      you on Arcanus will be Klackon cities, and the output of Klackon cities is
      easy for Stag Beetles to defeat. If I was going to do this again, I'd take
      Gnolls, since they can't get any unit with higher than 3 defense, AND the
      Gnoll units the AI will build will have higher attack.

      "Or, if you wanted to be really sneaky, make the player start on Myrror.
      Normally that's an advantage, but here it just means you have to bust through
      a tower before you can do anything - and what if there's no towers on your
      island? You could even require the player to restart until they get a port
      city on an island with no towers... >:)

      "tl;dr version: MOM is too damn easy (because the AI is so stupid/
      predictable.) And magic itself is surprisingly underpowered."

    - Eli Dupree, who rediscovered Master of Magic about a week ago and has been
      playing it with all kinds of different settings.

    10.16) Hit Versus Shields Combat Table

    How to use this chart. To determine the expected damage from a melee round,
    go to the row that begins with the number of swords shown for the attacker.
    That is the per-figure number of swords. Then go to the column with the
    number of shields shown for the defender. The number shown is the expected
    hits per-figure. Multiply by the number of figures in the unit, and you
    get the total expected hits. Note: this assumes no "to-hit" bonuses.

    Note: The last two columns are 20 and 50. The 50 column represents the
    defense level you get with various immunity enchantments. For example,
    Magic Immunity gives you a 50 shield defense against magic ranged attack.
    Missile Immunity gives you a 50 shield defense against missiles.

    S
    W
    O
    R   Shields
    D   0   1   2   3   4   5   6   7   8   9   10   11   12   13   14   15   20   50
     1   0.3 0.2 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
     2   0.6 0.4 0.3 0.2 0.2 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
     3   0.9 0.7 0.5 0.4 0.3 0.2 0.2 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0
     4   1.2 1.0 0.8 0.6 0.5 0.4 0.3 0.2 0.2 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0
     5   1.5 1.3 1.0 0.8 0.7 0.6 0.4 0.4 0.3 0.2 0.2 0.1 0.1 0.1 0.1 0.1 0.0 0.0
     6   1.8 1.5 1.3 1.1 0.9 0.7 0.6 0.5 0.4 0.3 0.3 0.2 0.2 0.1 0.1 0.1 0.0 0.0
     7   2.1 1.8 1.6 1.3 1.1 1.0 0.8 0.7 0.6 0.5 0.4 0.3 0.2 0.2 0.2 0.1 0.0 0.0
     8   2.4 2.1 1.9 1.6 1.4 1.2 1.0 0.9 0.7 0.6 0.5 0.4 0.3 0.3 0.2 0.2 0.1 0.0
     9   2.7 2.4 2.1 1.9 1.6 1.4 1.2 1.1 0.9 0.8 0.6 0.5 0.4 0.4 0.3 0.3 0.1 0.0
    10   3.0 2.7 2.4 2.2 1.9 1.7 1.5 1.3 1.1 0.9 0.8 0.7 0.6 0.5 0.4 0.3 0.1 0.0
    11   3.3 3.0 2.7 2.4 2.2 1.9 1.7 1.5 1.3 1.1 1.0 0.8 0.7 0.6 0.5 0.4 0.2 0.0
    12   3.6 3.3 3.0 2.7 2.5 2.2 2.0 1.7 1.5 1.3 1.2 1.0 0.9 0.8 0.7 0.6 0.2 0.0
    13   3.9 3.6 3.3 3.0 2.7 2.5 2.2 2.0 1.8 1.6 1.4 1.2 1.1 0.9 0.8 0.7 0.3 0.0
    14   4.2 3.9 3.6 3.3 3.0 2.8 2.5 2.3 2.0 1.8 1.6 1.4 1.3 1.1 1.0 0.8 0.4 0.0
    15   4.5 4.2 3.9 3.6 3.3 3.1 2.8 2.5 2.3 2.1 1.8 1.6 1.5 1.3 1.1 1.0 0.5 0.0
    16   4.8 4.5 4.2 3.9 3.6 3.3 3.1 2.8 2.5 2.3 2.1 1.9 1.7 1.5 1.3 1.2 0.6 0.0
    17   5.1 4.8 4.5 4.2 3.9 3.6 3.4 3.1 2.8 2.6 2.3 2.1 1.9 1.7 1.5 1.4 0.7 0.0
    18   5.4 5.1 4.8 4.5 4.2 3.9 3.6 3.4 3.1 2.8 2.6 2.4 2.1 1.9 1.7 1.5 0.8 0.0
    19   5.7 5.4 5.1 4.8 4.5 4.2 3.9 3.7 3.4 3.1 2.9 2.6 2.4 2.2 2.0 1.8 1.0 0.0
    20   6.0 5.7 5.4 5.1 4.8 4.5 4.2 3.9 3.7 3.4 3.1 2.9 2.6 2.4 2.2 2.0 1.1 0.0
    21   6.3 6.0 5.7 5.4 5.1 4.8 4.5 4.2 3.9 3.7 3.4 3.1 2.9 2.7 2.4 2.2 1.3 0.0
    22   6.6 6.3 6.0 5.7 5.4 5.1 4.8 4.5 4.2 4.0 3.7 3.4 3.2 2.9 2.7 2.5 1.5 0.0
    23   6.9 6.6 6.3 6.0 5.7 5.4 5.1 4.8 4.5 4.2 4.0 3.7 3.4 3.2 2.9 2.7 1.7 0.0
    24   7.2 6.9 6.6 6.3 6.0 5.7 5.4 5.1 4.8 4.5 4.3 4.0 3.7 3.5 3.2 3.0 1.9 0.0
    25   7.5 7.2 6.9 6.6 6.3 6.0 5.7 5.4 5.1 4.8 4.5 4.3 4.0 3.7 3.5 3.2 2.1 0.0
    26   7.8 7.5 7.2 6.9 6.6 6.3 6.0 5.7 5.4 5.1 4.8 4.6 4.3 4.0 3.7 3.5 2.3 0.1
    27   8.1 7.8 7.5 7.2 6.9 6.6 6.3 6.0 5.7 5.4 5.1 4.8 4.6 4.3 4.0 3.8 2.6 0.1
    28   8.4 8.1 7.8 7.5 7.2 6.9 6.6 6.3 6.0 5.7 5.4 5.1 4.9 4.6 4.3 4.0 2.8 0.1
    29   8.7 8.4 8.1 7.8 7.5 7.2 6.9 6.6 6.3 6.0 5.7 5.4 5.1 4.9 4.6 4.3 3.0 0.1
    30   9.0 8.7 8.4 8.1 7.8 7.5 7.2 6.9 6.6 6.3 6.0 5.7 5.4 5.1 4.9 4.6 3.3 0.1
    31   9.3 9.0 8.7 8.4 8.1 7.8 7.5 7.2 6.9 6.6 6.3 6.0 5.7 5.4 5.2 4.9 3.6 0.2
    32   9.6 9.3 9.0 8.7 8.4 8.1 7.8 7.5 7.2 6.9 6.6 6.3 6.0 5.7 5.4 5.2 3.8 0.2
    33   9.9 9.6 9.3 9.0 8.7 8.4 8.1 7.8 7.5 7.2 6.9 6.6 6.3 6.0 5.7 5.5 4.1 0.2
    34 10.2 9.9 9.6 9.3 9.0 8.7 8.4 8.1 7.8 7.5 7.2 6.9 6.6 6.3 6.0 5.7 4.4 0.3
    35 10.5 10.2 9.9 9.6 9.3 9.0 8.7 8.4 8.1 7.8 7.5 7.2 6.9 6.6 6.3 6.0 4.6 0.3

    Example: An undamaged unit High Men Swordsmen (Regular) attack a unit
    of War Bears. Swordsmen have 4 Swords, War Bears have 3 Shields. Looking
    this up in the table, that gives ".6", which we multiply by 6 figures in

    the Swordsmen units, to give "3.6" expected hits of damage.

    The 0 shields column shows the raw (undefended) hits of damage. You can
    use that to figure out the expected damage when the attacker has "to-hit"
    bonuses. Calculate the raw hits using:

            raw-hits = swords * (0.3 + 0.1 * (total-to-hit-bonuses))

    For example, if our Swordsmen make it to Ultra-Elite level, they will have
    5 swords and +2 to-hit. Raw-hits = 5 * (0.3 + (0.1 * 2)) = 2.5. That
    is almost the same as the 8 Swords Row (2.4 raw hits), so using that row,
    agains 3 shields, we can expect 1.6 hits per figure, 9.6 hits per round.
    Boy, those to-hit bonuses really help out!   [BLJ]

    10.17) Futility Combat Table

    Attack seems futile when you can't expect, on average, to do even 1 hit of
    damage. This would be 1 raw hit for a 1 figure unit, .5 raw per-figure hits
    for a 2 figure units, .25 raw per-figure hits for a 4 figure unit, etc.

    The following table shows, for a given number of swords and to-hit bonuses,
    the number of defender shields that make an attack futile. Of course, given
    the luck of the roles, a futile attack may cause damage, and a non-futile
    attack may fail to cause damage. (Note: Shields > 30 will be added later.)

Figs	1					2				4				6				8			
To-Hit	0	+1	+2	+3	+4	0	+1	+2	+3	0	+1	+2	+3	0	+1	+2	+3	0	+1	+2	+3
SWRDS 1	0	0	0	0	0	0	0	1	1	1	2	2	3	2	3	4	4	3	4	4	5
2	0	0	1	1	2	1	2	3	4	3	5	6	7	5	6	7	8	6	7	8	9
3	1	1	3	4	5	3	4	6	7	5	7	8	10	7	9	10	11	8	10	11	12
4	1	3	5	6	8	4	6	8	10	7	9	11	13	9	11	13	15	10	12	14	16
5	3	5	7	9	10	6	8	10	12	9	12	14	16	11	13	16	18	12	15	17	19
6	4	6	9	11	13	8	10	13	15	11	14	16	19	13	15	18	21	14	17	19	22
7	5	8	11	13	16	9	12	15	18	12	16	19	21	14	18	21	24	16	19	22	25
8	7	10	12	16	19	10	14	17	20	14	18	21	24	16	20	23	26	17	21	25	28
9	8	11	15	21	21	12	16	19	23	16	20	23	27	18	22	26	29	19	23	27	31
10	9	13	17	23	24	13	18	22	25	17	22	26	30	19	24	28	32	21	25	30	
11	10	15	19	25	27	15	19	24	28	19	24	28	32	21	26	30		22	27	32	
12	12	16	21	28	30	16	21	26	30	20	25	30		22	28	33		24	29		
13	13	18	23	30	32	18	23	28	33	22	27	33		24	30			26	31		
14	14	20	25	32		19	25	30		23	29			25	32			27			
15	15	21	27			20	26	32		25	31			27				29			
16	17	23	29			22	28			26	33			28				30			
17	18	25	31			23	30			27				30				32			
18	19	26	33			24	32			29				31							
19	20	28	35			26				30											
20	22	29	37			27				32											

    Of course, 1 hit of damage may not be enough to affect a battle. But the
    purpose of this table is to show when shields make an attack essentially
    pointless.   [BLJ]

    10.18) MOM improvement suggestions to Microprose/SIMTEX

    Sometimes the computer takes over a node and doesn't bother to send a Magic

Spirit to meld with it. Maybe the computer player sends a Magic Spirit, but
if the Spirit gets killed, then the computer doesn't think to send another
one.
                                                                        [BLJ]

Stream of Life is unbalancing. It should reduce unrest by 3, 4, or whatever,
but it should not reduce unrest to 0, no matter how high the tax rate. [BLJ]

Give me a customizable build plan instead of that stupid Grand Vizier!
                                                     [sca@advge.magwien.gv.at]

Add extra quivers in misc item creation. Would help my 8 shot archer!
                                           [jharmon@Mesa.Colorado.EDU (jack harmon)]

It would be nice if some special feedback (graphic or sound) indicated
when a death or disintegrate artifact killed by death or disintegration.
Then you would know the special property actually did something.   [BLJ]

1) The ability to save a Wizard in a spot at the beginning at the
   game. It's deeply annoying to have to rechoose name/spellbooks
   each time you start a game.
2) Starting the game with a settler unit rather than a city. It's not much
   fun to start a game with a city in the middle of the desert.
                                        [duvaljc@ERE.UMontreal.CA (Duval Jean-Carl)]

What I would like to see changed, and what I think a big problem with
the diplomacy in MOM, is the personality setting. I've had *WAY* too
many encounters with a "chaotic" wizard (especially that stupid lizard
S'ssra), in which I went from calm relations to hate in one turn. The
game didn't allow relations to slide down, offering me the chance to
make amends for my transgressions and/or bribe him back to normality.
Also, why categorize a wizard as "expansionistic"? Shouldn't they all
be at least somewhat expansionistic? Otherwise, you get situations like
in MOO where 600 turns into the game the Alkaris still have their home
planet but no other and have this huge fleet of gnats flying around and
getting in my hair and stuff.

Personality ratings are fine, but they should be more accurately defined
(i.e. peaceful, warlike, distrustful, naive, etc.). Just a thought.
                                          [bh093@freenet.buffalo.edu (Patrick Dare)]

Just once I would like to see the computer summon Torin. But only once.
                                                                        [BLJ]

Multiplayer MOM.   [everybody]

Instead of sending 3 mediocre 3-4 unit stacks against your city, one at a
time, the computer should combine them into one killer 8 or 9 unit stack.
                                              [bill@msi.com (Bill Poitras)]

Sometimes the computer attacks with settlers. It may be that when the
settler picked the destination or path nothing was there, but then it
"blunders" into a unit of mine that arrived after the settler started.
                                              [bill@msi.com (Bill Poitras)]

Computer opponents just sit inside the city while I slaughter them with
ranged attacks. If sitting is hopeless they should come out and engage me.
                                                                        [BLJ]

When confronted with an invisible opponent, the computer players should march
around trying to find him. I know this would be hard to program, but just
think how much you guys will impress me if you pull it off.   [BLJ]

Some wizards need to expand a little more aggressively.   [BLJ]

Every human player know the value of Granaries and Farmers Markets. Every
well developed neutral or computer player city should have these.   [BLJ]

It's disappointing when computer heros are weak and have no artifacts. At
impossible levels, the computer heros should get some sort of experience
bonus. It could just be 4 pts per turn instead of 1. Or - this would be
diabolical - every time one of your heros is in a battle and gets experience
points - some computer owned hero gets the same number of points. Or half as
many points. Also, maybe every CP wizard's turn there could be a 2% chance
that one of its heros gets a randomly selected artifact.   [BLJ]

I may be in the minority on this one, but I'd like to see an option in
the settings screen to get rid of the Spell of Mastery. I think this is
the cheesiest aspect of the game, and would rather worry about foreign
conquest than lose my game just because an opponent cast the SoM and I
forgot to dispel it. i say make it an option, not remove it entirely
(though i'd always use the option to turn it off). Anyone else think this
is one cheesy spell?
                              [war@westnet.westnet.com (W. Mjollnir Ransom)]

When CP galleys are attacking they should close in so their arrows have a
better chance of hitting. Each round, move forward N-1 moves and then shoot.
                              [jrk3g@darwin.clas.Virginia.EDU (Jeffrey Robert King)]

Has anyone else noticed that MOM requires an excessive degree of
micromanagement in order to avoid wasting production or spell research.

The problem is that production above that needed to produce the unit a city
is working on, and spell research points above those needed for the current
spell seem to go into never never land. It is therefore necessary to change
all allocations every (expletive deleted) turn in order to avoid waste.
                              [b91926@fsgm01.fnal.gov (David Sachs)]

When a unit is on "patrol" and an enemy comes within site, the unit should
"wake up". In other words, you should get asked to move it during your turn.
                              [ykcho1@mdw024.cc.monash.edu.au (Mr YK Chong)]

When settlers are killed by a life stealing attack, you get Death Settlers.
They can't do anything. Wouldn't it be cool if their Build button worked,
and you got something like: "Your Death Settlers create a city of death.
The city falls into ruins." Then you would get a ruins their, similar to
what you get when a monster destroys a city.   [BLJ]

Make the consequences of breaking a treaty severe:

   Imagine this message:
     "Your longtime ally and trusted friend Kali has just sacked your
      city of London killing thousands of your citizens."
   then:
      "Roland has left the service of Kali and wishes to join your cause.
       Hire/Reject"

   or suppose the player betrays S'ssra whose capital is in a Beastman city:

      "Enraged over your ruthless attack on S'ssra's city of Darkover, all
       of your Beastman cities have reverted to neutral status."
                              [rhondaa@boi.hp.com (Rhonda Wilson)]

Dirk Pellett has a large number of suggestions for a new MoM:

Immolation spell should give the unit fire immunity, then it might be worth
the bother of researching and casting.

Disenchant Area should be able to uncorrupt corrupted land, one square at a
time, to give you some chance if you have a race that doesn't do shamans or

priests (e.g. high elf, dwarf, gnoll). (Unless the new Nature spell purify
is added; see below.)

Disenchant Area should be able to unenchant enchanted roads on Arcanus at
least, and possibly on Myrror also, one square at a time.

Raise Volcano should DESTROY any roads on a square, just like it does with
outposts, and it should be impossible to build either a road or outpost on
an active volcano. In fact it should be impossible to WALK on molten lava
unless the unit has fire immunity or flight (not even non-corporeal units
should be allowed, and this should include chaos nodes)! Then you could
build a protective barrier around your cities, if you wanted, which would
eventually cool and become passable. And you could disconnect enemy cities
from each other by bombing the roads, costing the enemy gold, and keeping
engineers busy repairing them.

Volcanoes should not count toward the requirement for miner's guilds until
after they cool to normal mountains. You can't 'mine' molten rock.

If a unit is immune to illusions, then illusionary attacks (and phantoms)
should never do ANY damage, not just become "normal" attacks. (Hmm, after
a little more thought, this would make certain sorcery nodes too easy to
take with a single unit of skeletons or a True Sight spell.)

A warship or other ship with planar travel should take its passengers along
when it shifts planes.

Guardian Wind should be a Nature spell -- it's too powerful for Sorcery to
get both Guardian Wind and Magic Immunity (not to mention Invisibility and
Spell Lock besides).

Wouldn't it be cool to have a sorcery spell to make a unit phantasmal?
In fact, I've thought of a lot of new spells that would be neat to add,
spreading out existing spells into five or even six levels of spells.

Nature additions:
        purify (always removes corruption)
        regrowth (destroys roads, only in grass/forest/swamp/river areas)
        cold immunity
        stoning immunity
        merging
        lions (summons a pair of lions, about double-strength war bears)
        colossal strength (+5 melee strength)
        mass web (drops a web on all enemy units in combat, even if they
                are invisible (non-corporeal still exempt, of course))
        tremors (mass cracks call, 15% on every unit, 50% on every wall)
        flood (10% chance of destroying buildings, non-flying non-water-
                walking corporeal figures 10% chance to drown, nearby desert
                or grass terrain becomes swamp (nightshade might grow),
                all roads in those squares are destroyed)
        glaciation (starts an ice age, slowly freezing the worlds from the
                poles inward: all lands adjacent to tundra have a 20% chance
                of becoming tundra, caster's cities are immune) (note that
                chaos wizards have a defense against it by melting tundra
                with volcanoes before it spreads; sorcery wizards can use
                a nature ward to protect individual cities)
        blizzard (buries city under snow, all figures take 8 pts cold damage,
                buildings have a 5% chance of collapse, surrounding squares
                each have 50% chance of becoming tundra) (note what happens
                around a blizzarded city, if glaciation is in force!)
        nature's fortune (global enchantment: every unit becomes "lucky")

Chaos additions:
        putrify (curses city, nearby squares become corrupted 10% each turn)
        fire immunity (unless immolation does it)

```
              parch terrain (grass/forest into desert, hill into mountain)
              doom blade (gives auto damage to the unit's melee/bow weapons)
              alternate reality (cast on heroes: alters the fabric of reality,
                      substituting for the current hero with one from an alternate
                      reality, re-randomizing the hero's abilities)  (cast on a
                      city: changes the race of the inhabitants to a random race
                      but removes any buildings they couldn't have built) (cast
                      on a single normal unit or summoned creature: changes unit
                      or creature to a random one of comparable cost +/- 20%, of
                      ANY race or realm)
              dessication (like glaciation, only adjacent to deserts, turns swamps
                      to grass, grass/forest to desert, hills to mountains, AND
                      dries up rivers into swamps (no more river!).)  (note: nature
                      wizards can defend with gaia's blessing and change terrain,
                      sorcery wizards can defend with chaos ward)

      Sorcery additions:
              phantasmal (makes a unit illusionary and non-corporeal)
              phantom archers (with a phantasmal missile attack)
              stasis (in combat)
              teleport (in combat)
              teleport (overland)
              enchantment binding (captures a city enchantment, moves good
                      ones to a friendly city, bad ones to an enemy city)
              enhancement binding (captures a unit enchantment)
              global immunity (global enchantment; makes all the casting wizard's
                      units immune to magic both overland and in combat)

      Death additions:
              demon
              zombies
              vampires
              lich (can cast 20 points of death magic in combat)
              desecration (siphons mana from enemy city to you, like Dark Rituals)
              depression (global enchantment: every enemy unit loses 1 from every
                      type of attack, 1 defense, and 1 MOVEMENT in combat as well
                      as overland, but not to 0 in any case; also increases unrest
                      by 1 in every enemy city; no effect on magic-immune units).
              plague (cast on a stack overland, gives them a vile disease that
                      acts like Wrack is *supposed* to act, doing damage each turn
                      until the unit is dead or the enchantment is dispelled.  AND
                      a plagued unit moving onto other units OR cities spreads the
                      plague to those units or cities! (even if they're enemies!)
                      Only undead, charmed, and illusionary units are immune.  Note:
                      magic immunity doesn't stop it.  Units with high resistance
                      that never take damage can still become carriers!  The only
                      cure is Herb Mastery, death of the unit, or a new Life spell.)
              madness (cast overland, drives an entire stack of units insane, who
                      proceed to: 1: commit suicide, 2: attack each other, 3: drop
                      weapons (if they had any special ones), 4: wander aimlessly,
                      5: become marauders, neutral to any cause, OR 6: surrender
                      to the casting wizard, joining his army, if they are alone.
                      Even heroes can be affected, but can't do 5 or 6.)
              rebellion (attempts to incite a rebellion in an enemy city)

      Life additions:
              persuasion (attempts to take control of a neutral OR enemy city,
                      complete with its garrison, without a battle; works if EVERY
                      garrisoned unit fails resistance roll at +2 to resistance)
              cure disease (removes plague from a unit, see above)
              charm of life (to match the current picture:
                      doubles population growth in all cities)
              fortitude (does what current charm of life spell does: +25% hits)
              poison immunity
              cloning (duplicates normal unit, but without special weapons, 0 exp)
```

Nature's Eye should be castable on any location, and set up a permanent spy
outpost until someone dispels it.

Cloud of Shadow should be castable on any opponent city, to make combats
there be under Darkness AND increase unrest. Or, castable on ANY map square,
to affect combats within a 3x3 (minus corners) area.

Hellvenly Light, worthless as it is, should reduce unrest on life-mage cities
and increase unrest when cast against death-mage cities. Or, castable on
any map square like the previous idea for Cloud of Shadow.

Call the Void should be castable on any map square, causing damage to units
there and corrupting the surrounding areas.

Earthquake should be castable on any map square, putting all units within a
5x5 area (minus corners) at risk, with 1% chance of destroying roads in that
area.

The biggest change that I think would be awesome would be for heroes to
be able to cast spells overland, on any square, city, or unit within that
hero's scouting range, to a cost up to the hero's casting skill (counting
items). This would let a hero cast Bless or Stone Skin on himself or on
traveling companions, without wasting the time of the controlling wizard.
Upkeep would be normal from then on, of course. A hero with greater power
could cast Change Terrain or Transmute on adjacent areas, Enchant his own
nearby Roads, summon Floating Islands where he needs them, or Disenchant a
city with a bad enchantment on it, or even -- for super-powerful demi-gods
with powerful artifacts -- cast Earthquakes and Ice Storms on adjacent
enemy stacks.

The heroes should not get to use their full casting skill every turn (let
alone five times in the same turn when five groups of enemy units attack
him, BAH!). It should give him 1/5th of his casting skill in mana back each
turn, and he has to use it wisely or run out and have NONE to use in combat.
Overland spells would use his mana the same as using it in combat. That
way, a hero with 100 casting skill could throw an Enchant Road every five
turns, Giant Strength every two turns, or use an average of 20 mana in each
combat (maximum of 100, only if fully rested).

There's no good reason why the same wizard shouldn't be able to hire more
than one hero of the same type: two rogues, or two sages, or whatever, if
desired and they're available to be hired or rescued or summoned. If one
wizard builds a hero up and then dismisses him, why shouldn't the hero go
to a different wizard, instead of begging at the door of the wizard who
sacked him? Why should it be impossible for the newly summoned hero to
be another barbarian, just because I already have one? (For that matter,
I wish there was no limit on number of heroes at all -- just create new
random ones as needed. Oh well.)

An armory, fighters guild, armorer's guild, and war college should act as
armsmasters +2,+4,+6,+8, for all fighter-type units garrisoned in the city
(all units without "healer" or magic missiles), NOT as "instant experience"
for newly built troops.

A shrine, temple, parthenon, and cathedral should act as armsmasters
+2,+4,+6,+8, for all priest-type units garrisoned in the city (those with
"healer" ability, except heroes).

A library, sage's guild, alchemist's guild, and magician's guild should act
as armsmasters +2,+4,+6,+8, for all mage-type units garrisoned in the city
(all those with magic missiles and not "healer", and yes, that means all
Dark Elf units except priests and nightblades).

An Altar of Battle spell should be an armsmaster +12 applying to all normal
units, and NOT give instant elite units. ALL new units built anywhere
should start out as recruits with NO experience!! Then they can go off to
War College in a neighboring capital if they want, or hang around the local
armory to learn a little bit at a time.

An alchemist guild with available mithril or admantium should equip the
topmost garrisoned unit that needs that type of weapon, at a rate of one
figure per turn (e.g. 4 turns for war trolls, 8 for halfling spearmen).
Then you can train units one place, and move them to another city to get
their equipment, and have better units even from races that can't build
alchemists guilds. This should be INSTEAD OF the automatic equippage of
all units produced in that city. And it should work for heroes, stopping
in to pick up an admantium weapon from a city with plenty of them. (Of
course, even if there's no mithril or admantium, the alchemist's guild can
give the topmost unit magic weapons if needed.)

I sure wish the stupid alchemy option would be fixed so that if you don't
have the Alchemist skill, it would NEVER give you odd numbers of gold to
convert. It's just a pain in the ass to avoid throwing away 1 gold every
time you convert some. Either that, or never give even numbers; either way
would avoid the stupid irritation.

Any excess you allocate to research should automatically be converted to
mana or skill (whichever one has the highest allocation), eliminating yet
another irritation. Naturally, if the excess comes from cities, it can't
be converted.

City rebellion should depend on the number of rebels in the city -- no
rebels, NO chance of rebellion (duh!) but otherwise, 1 rebel is 1% chance
each turn that the city rebels. That would make unrest actually matter
more than just a few gold and production points difference.

When a city rebels, it should immediately cause a battle between your loyal
garrisons and the garrison units that join the rebellion. If you win the
battle, you retain control (but with a smaller garrison, and therefore more
unrest, and a greater chance of rebellion the next turn also). If you lose
the battle, or if there are NO loyal garrison units, the city turns neutral
like it does now. The chance of a garrison being loyal should depend only
on race of the unit vs. the race of the master city, not on its strength,
resistance, or anything like that. (Dwarven hammerhands are as likely to
turn against the dark elf masters and try to liberate their own city as they
are to defend it, but nightblade garrisons in a dwarven city would be far
more likely to help to put down the rebellion.) If it has any good unit
enchantments cast on it, that should make it more loyal (and if it rebels,
it should lose that enchantment before the battle). All summoned creatures
are "bound to the will of the wizard" and therefore cannot rebel, so keeping
creatures in a city would guarantee it can't rebel without a battle, at
least against the summoned creatures. (That would provide some reason for
keeping them there, since right now they are useless at controlling unrest.)
If the battle ends in a draw ("retreat exhausted") then the rebels would
leave the city, and attack it again the next turn as normal marauders.

Allow storing up food to a maximum of 10 per granary, the same way gold and
mana are stored up, so you don't have to micro-manage food production every
blasted turn.

Instead of spell research working the way it does (X points of research
gets you the spell 100% of the time, X-1 points gets you the spell 0% of
the time), it should have a certain chance for EACH library, sage's guild,
university, and magician's guild that someone there discovers the secret to
the spell on any particular turn. (The report says "A librarian in Fa-rul
has discovered the secret of the Enchant Road spell!" (or "a professor in
Oxford" etc).) AND there should be a chance of discovering new spells AND
SPELL BOOKS on old dusty shelves -- verrrrrry rare chance for spell books --

("In a dark vault, a magician from Fellwood discovered a Chaos spell book!")
so that there's actually a reason to leave those libraries around after you
have the spell of mastery. It would also mean that enemy wizards could
suddenly add a spell book, and be able to trade spells with you.

A city should not be able to use resources from squares covered by enemy
troops, whether that resource is food, production, or mines. Surrounding an
enemy city with a wall of troops covering everything should leave it with no
terrain bonuses for food or production (the same effect as corruption, only
while the troops are there), and if that means it doesn't have enough food,
it should begin starving, just like a real siege. An alliance or wizard
pact with a wizard would mean his troops would not have this effect near
your cities.

An alliance between wizards should allow their troops to pass through each
other, and even pass through cities controlled by the other, even stopping
on the same place without fighting.

Roads controlled by enemy forces should be unavailable for trade routes,
so blocking a road would be an effective way of reducing an enemy's income.
Same with blocking shore squares with ships, and blocking river squares with
land units.

Trade between wizards should consist of an offer of spells, gold, mana,
and/or items, in any combination, and a request for a specific spell, gold,
mana, and/or item (if available). The other wizard should weigh the value
of each, come up with a total, and determine whether to accept the offer as
is, make a counter offer based on the original, or sneer at it. The way it
works now, with only spell for spell, and very rarely spell for truce or
gold for truce, is too limiting.

==
11) MOM War Stories
==

  A lot of the fun I get from reading the net are hearing colorful tales about
  other people's battles. Note: Some of these are with MOM 1.2 or earlier.
                                                                         [BLJ]

11.1) Any units with a harder punch than Killer Hobbits?

  Champion, Lionhearted, slingers with Flame Blade, Adamantium weapons, led by
  Torin the Chosen Leadership 4, blessed by an Archangel (Holy Bonus 2), have
  an attack strength of 17. That is 8 * 17 = 136 hits.
                                                    [ai7141219@omega.ntu.ac.sg]

11.2) Time Stood Still

  I tried my first game on impossible level. My butt got kicked three times
  before I got a reasonable start. It was a struggle from the start but I
  survived as one of the computer players did not declare war on me. It is
  quite possible to stand up to one computer player. Well I thought the
  game was won when I got my paladin production going but then there
  was an unexpected incident. Jafaar, whom I had not seen yet as he was the
  sole occupant of the other realm cast Time Stop! I sat with a long face
  before my monitor watching the harddisk lamp blinking as he made his turns.
  It became boring after ten minutes and I thus started pressing various

    keys to try to stop the game but nothing worked. The stupid Jafaar
    cast a lot of Time Stops and other enchantments so he eventually run out
    of mana and gold. It would have taken forever otherwise as I suspect that
    he had 30000 in both mana and gold when the first time stop was cast.
    Now it "only" took 45 minutes on my DX33 until I got to move my units.
    I then took a tower and moved my killer stack + flying scouts to Jafars
    plane and took out his wizards tower. The game was quite easy after that.
                                              [e90mli@efd.lth.se (Marcus Lindberg)]

    11.3) Those are some spearmen!!

    Incidentally, does anyone out there know how the computer decides whether
    a computer controlled Wizard gets a node or not? In the game that I had
    previously mentioned, there was a node right outside my fortress that was
    guarded by four air elementals and two sky drakes. (It was on Arcanus
    too!) Anyway, the computer wizard sent a force with 2 heros, a lot of
    halberdiers, and a pair of bowmen to take over the node. They were
    completely annihilated. However, a few turns later, the same wizard sent
    a handful of spearmen and two halberdiers, and was successful in taking
    that node! Even more surprising was that he didn't lose a single
    unit...or take any damage at all. My only thought was... Wow, those are
    some spearmen!!   [edwong@uclink.berkeley.edu (Edmond Kar On Wong)]

    Note: This is an example of "Strategic Combat" in action. Presumably, even
          a weak stack has a non-zero chance of success in every situation. [BLJ]

    11.4) I hope he named the outpost "Haroldville"

    I found a bug with with a champion I summoned. Using summon champion, I got
    Sir Harold. He had most every possible benefit, including create outpost and
    meld with node. He had an upkeep cost of 10 mana per turn. I decided to
    save the game and see if he could really create an outpost. He made a High
    Men city. A few turns after the city was made, even though Sir Harold was no
    longer around, the Viceroy mentioned that Sir Harold went up a level. When I
    restored the saved game, Sir Harold went back to his normal boring stats and
    upkeep cost. The extra "every" benefit did not make it to the save file.
                                              [ahaas@holli.com (Alan Haas)]

    11.5) Jade, Queen of Darkness

    I finally tried to play with Death Magic. I customized my wizard, took
    Myrror and Archmage skills, and invested the rest in Death Magic. The
    only reason that so far I refused to even take a Death book is that
    its power is so vile, and it only brings destruction. Now I'm a person
    who enjoys building and improving things. I waged war every where, but
    I do not like to spread pestilence on others, or leading a horde of
    zombies. Chaos magic is still okay, but Death: NO!

    But, well, it's only a game, right? So for a change I become the Queen of
    Darkness, for once. I call my capital Xaragoz -- those who read the
    Warhammer books may recognize the name. The second city is Skullhaven, the
    third Rou Extase, the forth is a mockery: Nirvana, and so on. Gosh, I am
    evil <sigh>. The magic is cool, although I miss all those constructive
    spells of Life or Nature, and the elusive spell of Sorcery. But the spells
    are so different in nature that it's actually very fun to play it. Now in
    version 1.1 Phantom Warriors have become useless, but look at Black Sleep! I

put Basilisks into slumber, can you imagine?? One thing you should bear in
mind, is, since you don't have that neat Change Terrain on the Nature Magic,
that you will have to chose the place of your new Outpost well. If you
started on a tiny island, well, it's your badluck. I recommend that you
start with Draconians, or take Beastmen. A Queen of Darkness does not
consider Dark Elves bizarre enough. Dwarves were cool, but they grow too
slow for my liking. Unless Simtex gives Dark Elves more bizarre units, I
won't consider playing them.

All in all, I think you should try to play with Death Magic. It's quite an
experience.   [Wishnu Prasetya (--Jade--), DC]

11.6) Early 1.3 experiences

I don't quite know how to say what I'm about to say, but...I'm <gulp> losing
a game on the hard level. I'm losing and I'm having a blast doing it. This
patch is a _huge_ improvement (actually, I started on a small island, so I
didn't expand very aggressively in the beginning). The AI is very aggressive
and it's quick to make war if it feels it has an advantage. One very cool
thing is that when you ask an ally to go to war with an enemy, blood is
really shed and many cities change hands. I also noticed that the Myrrans
colonize both worlds now (there are actually two computer Myrrans in my
game). The computer players are *much* smarter, overall.

Simtex did a good job; MoM is much more interesting and a lot more fun to
play. I finally feel I'm getting my money's worth out of this game.
                                        [wawrzon@sun4.cs.wisc.edu (Joel Wawrzon)]

11.7) Another early 1.3 experience

Tell me about it. After puttering around on Normal and realizing that there
now seemed to be a brain behind the computer, I jacked a new game up to hard.

Gulp.

1. Wandering monsters are now a constant threat. They WILL kill you. Gone
are the days of a single spearmen garrisoning a city for much of the game

2. The computer puts a nice mixture of units in it's cities. And I have yet
to run into either a) the 9 stack of some expensive creature b) the city that
HAD a garrison 1 turn ago and now is abandoned or c) the stack of a half
dozen Triremes, empty, at that.

3. The computer now MOVES on your turf. Haven't seen the park-a-stack in a
clueless manner within striking distance and then do nothing maneuver (which
the AI used to be a pro at implementing).

4. The computer areas are much more built up. More roads, more varied units.
They actually fight one another and kill each other, as Joel noted above.

I've played about 4 hours total, to a decent midgame with the beginnings of
serious contact. Time will tell how bad my ass will get kicked in my current
game. But I wouldn't buy any real estate in my kingdom, if you know what I
mean.

It was becoming shelfware for me. Now, my marriage is at risk again :-)
What's cool is that waiting for this patch gave me just enough time to become
rather comfortable with operating the game and various color combos. Now I
might have to think to win. Life is tough that way, I suppose.

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                                      [Marc MadProg <madprog@raven.cybercom.com>]


     -------------------------------------------------------------------------------
     11.8) Lo Pan - Can't Get Rid of Him
     -------------------------------------------------------------------------------

        Do wizards actually complete the Spell of Return in MOM v1.3?

        Oh they make a return, like your worst nightmare.  Time and again.  It only
        takes them a few turns, and keeps happening until they have no cities left.
        Dozens of times.  I mean, if it wasn't fun, it would be annoying.

        When you get to the fourth and last wizard, he only takes three turns to
        return.  Extrapolating, I figured I had only about 10-12 turns to banish
        Ariel.  Each time Ariel came back he'd start casting spell of mastery again.
        This cycle continued for about 15 times until he placed his fortress tower on
        an island on Myrror which I couldn't get to.  At that point it was a race to
        see who would finish casting spell of mastery first.  The outcome was in
        doubt to the very last turn, wasn't sure who was going to win when the normal
        upkeep/move screen cleared, but I indeed finished the spell first.
                                          [rainbow@apxws48.ih.att.com (Rob Buchner)]



     -------------------------------------------------------------------------------
     11.9) Fast Growing Races For A Better Start
     -------------------------------------------------------------------------------

        Your starting race matters at the beginning of the game.  Later you have
        conquered so many other race's cities that you have your pick of unit types
        to build.  I'm not sure if the slower growing races are worth picking.

        Based on growth, barbarians are pretty fast, and their Berserkers aren't bad
        either.  High men do produce those cool paladins, but it takes so long to
        produce the buildings necessary.  Is it worth it?

        These days, I've been playing quite a few games with nomads.  These guys seem
        average at best, but they seem to be able to build cities anywhere, and those
        rangers!  After building up my central city to the point that I could get
        veteran units with magic weapons, I sent out three units of rangers to
        explore and have a little fun.  They decimated a few cites (avoid cities
        defended by magician or shaman elite units).  The rangers also took out a few
        magic nodes and monster lairs/temples/ruins.  Sure they took a little damage,
        but they healed and went on.  I wonder what they could have been like if I
        had played Warlord.  Super-elite rangers, what a concept.
                                                              [BLJ, Tyson Tu, DC]



     -------------------------------------------------------------------------------
     11.10) Flying Invisible Warships!
     -------------------------------------------------------------------------------

        Prior to 1.3 Flying Warships made the game "too easy".  In MOM 1.31, they
        are the kind of thing that can make winning on impossible level, possible.

        To carry out this strategy, it's easiest to put 11 spellbooks into sorcery
        magic, and start with Wind Master, Flight and Invisibility.  Naturally,
        pick a race which can build warships.  11 Sorcery books drops the casting
        cost of flight to 75mp.  Not bad.

        Flying Warships go from 4 movement to 3, not too bad since you no longer
        have to skirt around land.  With Wind Mastery that goes up to 6!  But if
        you take on passengers, that is cut in half to 3.  (With passengers and
        no wind mastery, your speed is 1.5, which works out to 2.)  There are two
        ways to get back to 6 movement.  1 - Make all your passengers fliers (costly,
```

but helpful in battle), 2 - Cast Wind Walking on the flying ship.

BTW - if there is one thing harder to stop than a flying warship, it's an
invisible flying warship.

(... where ARE those rocks dropping from, anyway? Bonk. Aieeee! <grin>).

Spell locks or invisibility are handy to keep the flight from being
dispelled (it's annoying and time consuming to recast the spell at 75mp,
and though your ship will not crash when flight is dispelled, it will
not move in combat or on the map until you recast it, and it stays
gone if dispelled in combat.)   [Bronis Vidugiris, DC]

Sky Drakes have Immunity to Illusion and are a danger to flying invisible
Warships. However, with Haste and Wind Mastery you can run away from the
Sky Drakes and shoot them while you stay out of range. Elite Warships can
do damage against Sky Drakes 10 shields.

Some of the really heavily shielded monsters with lots of shields and hit
points will need to be mind stormed before the FIW can take them out but not
many.

Naturally most multifigure units get chomped pretty quickly. Of
course these warships are also great for giving a ride to your heroes and
mondo units [did you know you can have your heroes attack more than
once per game turn by picking them up after combat and carrying them
into the next one?]   [danhite@aol.com (Dan Hite)]

Yes, the Flying Invisible Warship is close to unstoppable. At easier levels
you may want to abstain from making them.

The really nice thing is that it's in the spirit of the game: a flying
warship! Of course!

"My lord! My lord!"
"Fool! My incantation of Mastery awaits!"
"My lord, the Frigates of the Golden Horde loom outside our walls! They
shimmer in the air, their broadsides unseen reave our walls, our troops
fall as grass beneath the thunderhead!"
"What...? Wait -- no --- aaaaah!"

And, in fairness, a good True Sight or Disenchant or Dispel Magic _will_
make them quite vulnerable. So I don't think they're outrageous. But
flying warships are, IMO, the coolest unit in MoM.   [Daniel Starr, DC]

How do I deal with those Invisible Flying Warships that Jafar keeps sending
against me? Okay, it isn't frequently asked, but the answer may provide
some strategy tips. People do frequently ask - How can I stop this or that
apparently unstoppable unit.

a. Flee - This is what the computer opponents will typically do. This
is not really a good idea as you will lose around half your forces and
the warships may pursue. It should only be used if there is no other
alternative.

b. Storm Jafar's Fortress - This is the preferred approach, but not really
applicable in most cases.

c. Cast Spell of Mastery - An even better approach than b, but even less
practical.

d. Disenchant Area - This is a good approach as it may strand the Warships on
land even if you lose the fight. Assume a base spell cost of 175 (this is
casting cost of Invisibility) in your calculations. See the section on
dispelling in the FAQ for more details. This brings up the question of "How

do I deal with Spell Locked Invisible Flying Warships?". This will be left
as an exercise for the reader.

e. Fight fire with fire - Turn your units invisible. Mass invisibility
will make all of your troops invisible. When invisible they can't be
targeted by ranged weapons.

f. Use non-directed spells - Some spells can be cast that don't require
knowing where an opponent is to be effective. These spells include spells
that directly damage the warships, for example Flame Strike, Magic Vortex,
Call Lightning and Wrack, and those spells which can weaken the opponents
attack such as Black Prayer and Terror. Holy Word is also a great
non-directed spell against summoned creatures, especially the undead.
Extreme examples of non-directed spells: Black Wind, Death Wish and Great
Unsummoning.

g. Wall of Darkness - This will prevent the warships from using their ranged
attacks against units stationed in the city.

h. True Sight - Cast upon a unit, will allow the unit to see the warships.
If the creature is magic using, flying, or has a ranged attack it can attack
the warships while they are flying.

i. Use undead and creatures with Immunity to Illusions - Undead and a few
other creatures and heroes can see invisible creatures. If you've got them,
Sky Drakes have Immunity to Illusion and are a danger to flying invisible
Warships. However, with Haste and Wind Mastery you can run away from the
Sky Drakes and shoot them while you stay out of range. Elite Warships can
do damage against Sky Drakes 10 shields.   [danhite@aol.com (Dan Hite)]

j. Toughen them up - Use tough creatures or magically toughen your forces
defenses. The warships will typically have 10-15 "rocks" attack strength.
Creatures and heroes with this many "shields" or more will be very hard
to kill. There are many, many spells that can help here. In addition,
Golems are naturally tough enough that they will be able to defend
indefinitely against the rocks from the warships, unfortunately they
can't attack back (unless they fly - hint, hint). Regeneration doesn't
hurt either.

k. Or, if you are playing with a custom wizard, pick Jafar's slot at the
start of the game. Then you will never have to deal with him at all.

There are probably other techniques that don't fall into one of the above
categories that will work as well.   [Brian Wade (FLEBO@AOL.COM), DC]

Another example of stopping an "unstoppable" unit:

Against a nine stack of Paladins. --> add 1 Torin or ArchAngel or High Prayer
and 6 hammerhands. If they are equipped with adamantium weapons they are
greater than 2 paladins each. With Torin and an Archangel and High Prayer and
Metal Fires each unit has 20 swords and will slaughter anything and are very
magic resistant.   [spido@clark.net (DriveBy Billy)]

Against any ground based "unstoppable" unit, a whole series of Cracks Calls
will eventually get it.   [BLJ]

===
12) Everything Else in the World   [DS]
===

This is a miscellaneous section for sticking anything else that I (Dan
Simpson) have found on the game Master of Magic.

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      -------------------------------------------------------------------------------
      12.1) Game Editors
      -------------------------------------------------------------------------------

        I know these editors still exist somewhere, but unforunately the sites
        that had hosted them no longer appear to be online. I haven't yet found
        an alternative source for these.


        EDMOM

        Edmom.zip is an editor for Master of Magic Version 1.2.  It is Version 1.0
        and has: city/unit/spell/hero/item/misc/map editor.  It is by C.k. (wolvy).
        Post on csig for comments for now.  C.k.  148306 bytes

        Some problems have been reported using EDMOM with MOM 1.3 or 1.31.  However,
        there is a workaround.  Create a directory and put MOM 1.2 in it.  Move your
        saved game file to this directory and run EDMOM.  Apparently, the names of
        spells, city enchantments, and attributes (retorts) are not written into
        EDMOM but extracted from the MOM program itself.  Use EDMOM to edit your
        saved game then move it back to your MOM 1.31 directory.  Voila!!  Whoever
        said "Cheaters never prosper" just never figured out how to give all of her
        cities Prosperity.  :)

        Seriously, with this workaround you can edit city enchantments, spells known
        and learnable, gold, mana, fame, retorts, experience, heros, artifacts, units
        and add gems, gold, mithril, to the map.  EDMOM is wonderful for trying out
        tactics, unusual spells and units and combinations that would normally take
        hours of play to get to try.

        Located at:

          cs.uwp.edu:  /pub/incoming/games/edmom.zip
          wuarchive.wustl.edu:  /pub/MSDOS_UPLOADS/games/editors
          ftp.cdrom.com: /.14/dresden/incoming
          ftp.wup.edu:  /pub/msdos/incoming/romulus/edmom.zip
          ftp.inf.tu-dresden.de: /.4.1/vol4/ms-dos/games/editors/edmom.zip
          swcbbs.com


        MOMEDIT 2.2   [DS]

        Comprehensive DOS editor that allows you to edit Spells, Global Enchantments,
        Cities, Special Abilities, Heroes, Spell Books and Wizard Information.
                                          [UnOfficial MOM Page]

        I had quite a bit of trouble getting this one to actually DO anything,
        however, so you may want to avoid it.

        Located at:

          http://www.proaxis.com/~jarvinen/magic/momedt22.zip


        GRIMOIRE [DS]

        Smaller editor that has the basic features (no editing cities, however), but
        has the nice effect of giving you ALL spells of one circle at time (rather
        than one by one).  Strictly DOS based, and very colorless.

        Located at:

          http://www.proaxis.com/~jarvinen/magic/grmoir01.zip


        MOM EDITOR  [DS]
```

    A really good Editor that includes everything you could ever want in an
    editor (except the Give All Spells thing). Allows you to edit the map,
    cities, magic, anything!

    Located at:

      http://www.proaxis.com/~jarvinen/magic/emagic12.zip

    MOMEDIT (not the same as above) [DS]

    A really large editor (over a meg) that has a lot of features.

    Located at:

      http://www.proaxis.com/~jarvinen/magic/momedit.zip

  12.2) MOM Links   [DS]

    As you can see there isn't much here. That is mostly because this is such an
    old game, and interest in it has died down.

    MOM Sites:

      Microprose   -- http://www.microprose.com/
      Unofficial Home Page   -- http://www.proaxis.com/~jarvinen/magic/magic.shtml
      Heroes Page   -- http://www.sound.net/~rearls/index.html

    Non-MOM but very good sites:

      GameFAQ's   -- http://www.gamefaqs.com/

  12.3) Master of Magic Implode's Mulitplayer Edition

    Found at: http://www.roughseas.ca/momime/

    A partial remake of the game, uses the original game resources, and attempts
    to modernize it. Requires the full game installed and the latest 1.31 patch.
    Currently in beta, but looks very promising. Here is the list of what the
    creator wishes to accomplish with it:

      * Runs on modern versions of Windows
      * Can be played Multiplayer, Single Player or any combination of human and
        AI players
      * Is Client/Server architecture (this simplifies the network connection
        architecture no end, and allows players both inside and outside of a LAN
        to be in the same game)
      * Is fully multi-language, new languages can be added without having to
        recompile the code, and players playing in different languages can play
        together in a game without even needing to know what language the other
        players are using
      * Has a central hosting server where players can look for multiplayer games
        to join
      * Uses all the original graphics, sound and music (or at least graphics,
        sound and music closely based on the original) so that in every respect
        it looks and feels exactly like the original MoM
      * Runs in 640x480 rather than 320x200 using the original size graphics, so
        you can see more of the overland map at a time (may eventually run in

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          other screen resolutions/window sizes as well)
      * Can use any map size (within reason)
      * Can play up to 14 player games (so one player can play each of the pre-
        defined wizards)
      * Supports simultaneous turns, so you don't have to wait ages while other
        human players take their turns in between each of your turns - all
        players allocate moves at the same time and once everyone has finished,
        the server resolves all the movement at once (this is the only way big
        multiplayer games will ever be bearable)
      * Has a proper Fog of War (in the original MoM, you can see changes to
        enemy cities even if you don't have anyone close by looking at the city
        anymore)
      * Is totally configurable via an XML file and game options (e.g. you can
        add new pre-defined wizards, units, buildings, races and certain types
        of spells)
      * Sends all configuration data from the server when you join a game - so if
        someone does a mod to the XML configuration, they don't need to
        distribute it in order to people to join games on their server
      * Will form the basis of a more generic turn based game engine that I can
        use to develop other games


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12.4) Final Words... [DS]
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Again I (Dan Simpson) didn't write most the things in here, all I did was
revise the FAQ a little.  Hopefully what I did was worthwhile.  Oh well.  Again
the original author was Bryan Lee Jacobson (bryan_jacobson@mentorg.com)

ASCII Art created using SigZag by James Dill:   (freeware!)
  http://www.geocities.com/southbeach/marina/4942/sigzag.htm


   _____
  Shameless Self Promotion:

    I am Dan Simpson (dsimpson.faqs@gmail.com) and have also written FAQs for:

      NES:      Disney Adventures in the Magic Kingdom
                Final Fantasy -- Magic FAQ
                The Legend of Zelda
      SNES:     Aerobiz
                Aerobiz Supersonic
                Utopia: Creation of a Nation
      Genesis:  StarFlight
      PSX:      Thousand Arms -- Walkthrough
                             -- Forging/Dating FAQ
      PS2:      Madden NFL 2001
      XBOX:     Star Wars: KotOR II: The Sith Lords -- FAQ/Walkthrough
                                                    -- Influence Guide
      PC:       AD&D Rules FAQ, 2nd and 3rd Editions
                Baldur's Gate & Tales of the Sword Coast -- FAQ/Walkthrough
                                                           NPC List
                                                           Creature List
                Baldur's Gate II & Throne of Bhaal -- FAQ/Walkthrough
                                                   -- Items List
                                                   -- Class FAQ
                                                   -- Creature List
                Civilization III (incomplete)
                Colonization -- the Single Colony Strategy Guide
                             -- the Cheat Guide
                Drakan: Order of the Flame
                Dungeon Hack
                Icewind Dale & Heart of Winter -- FAQ/Walkthrough
                                                  Items List
```

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                                                   Kresselack's Tomb Map (JPG)
                                                   Burial Isle Map (JPG)
                                                   Shattered Hand Map (JPG)
                 Icewind Dale II              -- Items List
                 Master of Magic (revision)
                 Messiah
                 Pharaoh (currently being edited by Red Phoenix)
                 Planescape: Torment  -- FAQ/Walkthrough
                                         Items Listing
                 Rollercoaster Tycoon
                 Sid Meier's Alpha Centauri
                 The Sims
                 Ultima 4: Quest of the Avatar
                 Ultima 7: The Black Gate
                 Ultima 7 Part 2: Serpent Isle
                 Ultima Underworld -- Keyboard Commands
                 Ultima Underworld II -- Keyboard Commands
                                      -- Spell List
   All of my FAQs can be found at:
     http://www.gamefaqs.com/features/recognition/2203.html
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Version History:

```
Original Version (4-24-95, 220k)
Changes in 2.4:  (6-14-99, 229k)
   Added section 12. Everything Else in the World
   Changed the format slightly
   Moved 1.8 to 12.1
   Added 1.9 What about MOM 2?
   Added ASCII art
   Small Revisions, Changes, and Additions everywhere!
Changes in 2.5: (9-19-99, 247k)
   Fixed a few mistakes
   A Big format change
   Rewrote section 1.4
   Small Changes
Changes in Version 2.51 (2-29-00, 250k)
   Small Changes
   And Small Format Changes
Changes in Version 2.6 (3-1-00, 252k)
   Realized that there was no section 9.21 and deleted it from the contents
   Added a new Cheat which now became section 9.21, and came from Pieter Spronck
Changes in Version 2.7 (3-28-00, 263k)
   Added a new strategy from John M. Ewing (7.16 The Trader)
   Some small changes
Changes in Version 2.71 (3-29-00, 264k)
   Added another new strategy from John M. Ewing (4.31 Changing Tundra to
     Grassland)
   Some small changes
Changes in Version 2.8 (7-18-00, 270k)
   Lots of format changes
   Fixed a bunch of little errors, and generally cleaned the whole thing up
Changes in Version 2.81 (8-3-00, 273k)
   Added the section 10.5A Pathfinding Quirks from Kujala Matti

   Version 2.9  May 31, 2001  274k

     Added a Troll strategy from Dong-Young Kim.  Updated the format, and
     corrected some small errors.

   Version 3.0  September 11, 2002  399k
```

    Added Dirk Pellett's numerous tips, tricks, and other additions.

    Added a method to get MOM to run in WinXP. (sec. 1.10)

  Version 4.0 February 10, 2003 426k

    More Dirk Pellett additions. Greatly expanded the "MoM in XP" section,
    and I can now get the game to run in XP (using DosBox)! Other small
    changes.

  Version 4.01 January 19, 2005 425k

    Changed my email address and small changes to the format.

  Version 4.1 April 17, 2009 443k

    Added a section on a new mulitplayer rebuild of MOM in the new section
    12.3. Updated information on MOM2, there won't be one, but Stardock is
    making a game in the same vein. Added Eli Dupree's account on attempting
    the fantasy hard game in section 10.15.I. Added Zack Eskins' flying
    defenders trick. Added lots and lots of comments from MadKaugh. Replaced
    "What does F10 do?" section with "Keyboard Commands." Updated the patch
    link.

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