

Bridge Playing & Simulation Software Review

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Almost any computer chess program can probably kick your butt up, down and around your house; and it has been this way for decades. Not so with bridge playing software. Bridge is a much more complex game than chess. Expect a bridge playing program to perform at the club level. The best continue to improve.

You improve your play by playing with and against players at least at your own level of play. So, for most people, the most important feature of a program should be playing strength. Bridge software can have myriad other features, but playing strength is the most important. Don't worry about it playing too well: you can tell it to spend less time thinking. This will decrease the quality of play, but speed up the game.

The web site for the Jack program lists about thirty programs, and there are more, such as GNUBridge. However, if you just want to play a good game of bridge on your computer, there are only five programs to consider. In order of playing strength, they are:

1. Jack, jackbridge.com.
2. WBridge5, wbridge5.com.
3. Shark Bridge, sharkbridge.dk.
4. GiB, gibware.com.
5. Bridge Baron, bridgebaron.com.

This list is probably too long. You won't read much about WBridge5, because it's **free!** Download this program and the Jack 4 demo. If you want more than WBridge5, Jack is probably right. If you are looking for lots of features and support, Bridge Baron may be right, despite its second-tier level of play.

If you want to use your program with other programs, you need it to support *Portable Bridge Notation* (PBN), a file format for bridge deals.

All these programs offer multiple bidding systems and conventions built into the program, with varying breadth of features. None of them allow you to define your own conventions. Later, I'll discuss two third-tier programs that offer to let you do that.

Top Computer Bridge Players

Every year since 1997, all computer bridge playing programs have been welcome to compete at [World Computer-Bridge Championships](#). Usually eight or more programs are represented, with their developers. The format is teams-of-four, with four identical copies of each program competing. The four top teams from a round-robin of all possible matches play semi-final matches, with a final match determining the winner. The results of this annual contest provide a great way to evaluate the playing strength of the programs.

Jack 5

Jack has won eight of the last twelve championships, and appears to be the best purchase for simply playing bridge on the computer. You can get Jack through amazon.com, or for as little as \$54 at The Bridge World, bridgeworld.com. The Jack 4 demo is available at jackbridge.com.

If you want to do more with the program: Jack can read and write PBN files. While it can automatically bid and play a whole deal for you, it cannot do that for a whole file of deals that you import. Therefore, Jack may not be best for bridge research. It can, however, deal according to some specifications.

WBridge5

WBridge5 won three of the more recent championships. Since it is free, give it a try! Unfortunately, most of the web site, plus bits of the program, are in French. You'll mostly be on your own trying to figure it out. It's hard to beat the price.

If you want to do more with the program: probably look elsewhere. The author, Yves Costel, responded to my inquiry: there is no command-line invocation of WBridge5. He recommended that I explore "autoit", <http://www.autoitscript.com>. The source code for WBridge5 is supposedly available, so a programmer might be able to give it a command-line interface or teach it to play a whole file of deals.

Shark Bridge 1.6

Shark won the championship in 2011, and also won two experimental individual championships in earlier years. (As with human competitions, the skills required to win an individual event are different from those required for teams, which are generally regarded as the highest form of play.) The web site for Shark is clunky and spotty, which might be your initial impression of the software. Shark is no slouch at the play.

Shark is marketed and supported in the U.S. by Great Game Products, the developers of Bridge Baron, at bridgebaron.com, \$100. Shark is also available for as little as \$86 at The Bridge World, bridgeworld.com – verify that you will get support if you buy it there. Jack seems a much better value than Shark. Great Game Products offers a free demo of version Shark Bridge 1.6.

If you want to do more with the program: Shark will deal according to some specifications, but is otherwise limited.

GiB 6.2

GiB, "Goren in a Box" or "Ginsberg's Intelligent Bridge Player" (Matt Ginsberg wrote it), is the wild card in the first tier of programs. GiB won the championship in 1998 and 1999. It then skipped two years, and its last appearance was in 2002. In the 2002 round robin, it had already played well enough to assure a place in the semi-finals, when it had to withdraw due to technical difficulties. (Making these programs play against each other is apparently not easy.) We suspect, but don't really know, that the playing strength of GiB has fallen behind that of the newer programs, Jack, WBridge5 and Shark.

The CD version of GiB is still available at <http://www.gibware.com/>. Bridge Base Online (BBO) owns GiB now, and they are no longer maintaining this version. GiB plays the robots at BBO – they do maintain the bidding tables in the online version, but the play engine has not changed. It has a unique feature – the bridge engine and the user interface are two separate programs. The latter is written in Java. It's a lean, mean, and clean

interface that I like very much. However, cutting that out of the way is what made GiB such a good match for BBO: all they had to do was write a new interface for the engine, and they had working robots.

If you have never tried online bridge, you should try BBO. Simply playing is free; you pay for tournaments, playing with robots, and other features.

If you decide to purchase the GiB CD, you can save 20% at <http://www.bridgeworld.com>. I have owned GiB for at least a decade, and I have had more than full value from it. However, due to the lack of maintenance, most people should look elsewhere when buying a program. The bidding features are limited compared to Jack, for example. The program was developed on Linux and runs there or on Windows. There is no demo version.

If you want to do more with the program: GiB is great for analysis: it can be invoked as a command from other programs. I'll discuss using GiB with other tools in "Dealing and Simulation Tools" below.

Bridge Baron 23

Two other programs, Micro Bridge (Japan) and Q-Plus bridge (U.K.), both of which support PBN, appear to play a slightly stronger game now than Bridge Baron. However, Baron did win the championship in 1997 and got to the finals three times in the next decade. Baron is actively developed and supported by Great Game Products in the U.S. and has many features you may like. If you are going to buy one of these second-tier programs, it should be Bridge Baron, \$65. iBridgeBaron is now available for all major mobile platforms, \$20. Great Game Products also markets Shark in the U.S. for its greater playing strength (but far fewer features). The demo for Bridge Baron is at <http://www.bridgebaron.com/bridgebaron/>, "Click here to try it!"

If you want to do more with the program: Bridge Baron itself contains limited PBN support. *Bridge Manager*, a \$20 option, adds full PBN support and a number of other features. I played in a tournament once with Jason Rosenfeld, one of the authors of the *Bridge Baron Companion* (4th Edition), a \$25 book. You can also purchase two ACBL Tournament CDs for Baron, \$21 each.

Your Own Bridge Conventions

To get the capability to create your own bidding conventions, you need to drop down to the third tier of programs: Blue Chip Bridge, bluechipbridge.co.uk, and Bridge Buff, bridgebuff.com. Don't expect a strong game of bridge, or even a great user interface, from these programs.

Blue Chip Bridge 6

Blue Chip Bridge (U.K.) averaged a sixth place finish in eight championships, 1999 through 2006. Zia Mahmood once recommended it as "the best program for Acol players." (Perhaps an inferior bidding system held Blue Chip back.)

Blue Chip supports PBN, deals according to limited specifications, and will supposedly play all hands in a file (although I had trouble finding this in the help). It appears to have no double-dummy capability. It has tools for defining conventions, documented in somewhat scary detail on the web site. *I can no longer find that page, so unless you must have Acol, there may be no reason to buy this package.* The "Bidding" – "Bidding database" – "Edit bidding database..." option remains in the menus of the demo; it's disabled but described in the help, like many other features. The list of features still includes the statement, "[Bidding](#) is controlled by a bidding

database, which can be freely edited to your requirements”, but there is only a normal bidding screen shot at the link.

Blue Chip can interface with BridgeWebs: download session details and play the hands at home – even play as partners, using two computers.

You get Blue Chip Bridge from bluechipbridge.co.uk via PayPal for £58.50 (about \$94 now). They have a free demo. The software periodically requires you to insert your CD for it to read the serial number, which I find offensive.

Bridge Buff 19

Bridge Buff finished fourth in the 1999 championships, and eighth in its final appearance in 2000. Bridge Buff consists of multiple applications in one package. Buff provides comprehensive dealing and analysis capabilities. These are based on a fast double dummy solver, rather than non-peeking play. Buff can also peek while you are playing, if you wish.

The author asserts that double dummy solutions favor the defense. In practice, declarer often makes his contract because the defenders are in the dark. Buff offers an option called Declarer Advantage: the often-crucial opening lead is made according to simple rules, and then the rest of the deal is solved double dummy. This is supposed to be worth just over half a trick, on average, to declarer. With this approach, thousands of deals could be analyzed to provide a proxy for real world results.

A chief defect: Bridge Buff provides no support for PBN. Unless you type in the deals, you cannot currently use Buff with another program. You are basically limited to what the package gives you. Kaj G. Backas offers the free KGB Batch Converter online. It purports to convert between PBN and various file formats, including that of Bridge Buff, but it did not work for me. KGB sent me a later version, but it also did not work for me. The latest version requires installing the .net framework, which appears to be a free download from Microsoft.

I ordered the download version of Bridge Buff 19 from bridgebuff.com for \$60; there is a free but unimpressive demo of Buff 9 on the site (the player only, not the other tools).

The web site says nothing about the restriction, but the Sys Builder button announces that a 32-bit OS is required, and then quits, on a 64-bit system. I used it on my old XP system and transferred the resulting files to my main Windows 7 64-bit system, where they did work, sort of. The author, Doug Bennion, said he should just remove that feature: it’s too difficult to use, like programming a computer. Yes, but without it, anybody who wanted to define his own conventions would also have to build the bidding engine and other tools.

Unfortunately, I found the bidding framework of Buff to be defective. For example, I wanted to study $1\heartsuit - 1\spadesuit$ auctions. A key part of the system: if an opponent interferes at this point, I wanted a double by opener to show exactly 3-card spade support, a *support double*. The program had a check-box for support doubles, but the program ignored it on this auction. Doug confirmed that the program does not actually play support doubles on that auction. So, I tried to program it myself, using Sys Builder. This could not be made to work properly. Doug said the program does not treat pass, double and redouble the same way as bids. This was quite disappointing, since it was the reason why I bought the program.

A lesser complaint about Sys Builder: if you want to specify suit quality, the program is deficient. It only lets you specify a 0-loser or 1-loser suit. What is missing is a way of specifying the minimum number of top cards in the suit, such as 2 of the top 3, 4 of the top 6, etc. Most people would open a weak two bid on AJT987, but many would not open on AJ5432. Sys Builder cannot distinguish the two.

The feature list of the Bridge Buff package is impressive. However, I have yet to find a single application for the software that produces results which are both useful to me and reliable – and I tried to apply it to numerous situations. I'll present more in the next section.

Dealing and Simulation Tools

The tools in my simulation bag include:

- ActivePerl and ActiveTcl, <http://www.activestate.com/>.
- BridgeComposer (BC), bridgecomposer.com.
- Dealmaster Pro (DM Pro), <http://www.dealmaster.com/>.
- Deal, <http://bridge.thomasoandrews.com/deal/>.
- DDS, <http://privat.bahnhof.se/wb758135/>.
- GiB (see above).
- Bridge Buff (see above).

ActivePerl and ActiveTcl

Long ago, I chose Perl as my scripting language on Windows. The free version of ActivePerl is the version I use. This is the language in which I wrote my BridgeMats program, and I also use it to write various scripts to automate and glue together simulation work. In the current state of affairs, you cannot do efficient, serious bridge simulation work without writing some scripts.

The Deal program is written in Tcl, pronounced “tickle”. You must have Tcl installed on the system to use Deal. The free version of ActiveTcl works fine for me.

BridgeComposer 5.37

BridgeComposer is the program I use to generate deals and hand records for use with our club's dealing machine, and to write up bridge deals. It also has excellent features for simulations, running GiB and DDS. All details of the deals are stored in PBN, including double dummy or GiB results, if generated. BC is a great tool, well worth its \$20 price. I have had excellent direct support from Ray Spalding, the developer.

With a licensed copy of GiB installed, I use BC to “GiB Bid and Play All Boards”. If I take a power hit or Microsoft reboots my computer, BC offers me the opportunity to restore my session and save my work. If part of the play, for example, the bidding and opening lead, has been specified, GiB continues playing the hand from there.

BC will double-dummy 36 boards in about half a minute, using DDS. This produces all optimum results for all strains by all declarers, stored in the PBN file. This is just what is needed for hand records for a bridge game, the reason why it's in the program. However, if all you want is the result for one specific strain and declarer, most of that work is wasted. BC also does not let you specify partial play for DDS.

Dealmaster Pro 6.0

Dealmaster Pro is a powerful program with a quirky interface. I formerly used it to generate deals and hand records for use with our club's dealing machine, and to generate deals for simulations. It can write primitive PBN files that work better if augmented by a Perl script. I don't think DM Pro is being actively maintained any more, and it can be tricky to get an old copy to work on Windows 7. DM Pro includes the Deep Finesse double dummy solver, which takes about 5 minutes to process a set of 36 boards. (The DM Pro web site says this speed has been improved since I stopped using it.)

Deal 3.19

Deal is a powerful deal-generating program by Thomas Andrews. Deal is a Tcl programming language application; to get the much out of the program, you must write your own Tcl routines to produce the deals you want for your simulation. Deal can also run GiB and DDS. For a long time, I was mistakenly deterred by the need to learn a new program, plus install and use Tcl.

DDS

DDS is the free, powerful, fast, popular double-dummy solver by Bo Haglund. DDS is included and integrated with both BC and Deal, so there is no need to use it directly.

Comparing Dealing Programs

Carpenters know to put two levels together to confirm they are both working correctly. In the same way, it makes sense to compare dealing tools to each other:

- The Visual Deal application of Bridge Buff,
- Dealmaster Pro with BC and DDS,
- Deal with BC and DDS.

The test is 5,000 deals each, with criteria within the limits of all three tools, a typical 1NT – 3NT hand:

- North: 9-10 HCP, 2-3 spades, 2-3 hearts, 2-5 diamonds, 2-5 clubs.
- South: 15-17 HCP, 2-5 cards in each suit, dealer and declarer in 3NT.
- Thus either partner may be 5-4-2-2, and South may hold a five-card major.

Bridge Buff – Visual Deal

Tricks	4	5	6	7	8	9	10	11	12	13	Total
Deals	8	33	146	468	1116	1526	1232	412	55	4	5000
T x D	32	165	876	3276	8928	12734	12320	4532	660	32	44575
Deals	1771					3229					5000

Visual Deal does not let you see the actual deals, but it easily produces the data in the first two lines of this table. From the table we calculate that the contract is **set 35.4%** of the time [1771/5000], with an average of **4.09 defensive tricks** [13-(44575/5000)].

Dealmaster Pro and BridgeComposer with DDS

This is a trivial dealing problem for DM Pro. Bridge Composer then double-dummies all the deals, although more slowly than Visual Deal, because it updates every hand in the PBN file with the double dummy results for

all strains and declarers, not just the combination we care about. We then need a Perl script (t.pl) to extract and summarize the results for the 5000 deals: the contract is **set 39.7%** of the time, with an average of **4.21 defensive tricks**.

Deal and BridgeComposer with DDS

This is a trivial dealing problem for Deal. Another Perl script (dt.pl) produced a PBN, which was then processed with Bridge Composer and t.pl, as above: the contract is **set 39.7%** of the time, with an average of **4.21 defensive tricks**. I obtained these results 1,000 deals at a time, and the figures for each chunk were different. At least in this case, the full 5,000 deals were necessary.

(Instead of dt.pl, a detailed output script for Deal could have been written in Tcl. In fact, the whole job could be done with Deal by writing Tcl. Deal will call DDS with a specific strain (and lead, for that matter), so this approach could run faster than using BC. That's would have been much scripting in an unfamiliar language. Furthermore, there would be no PBN for use with my existing tools, unless I caused Deal to create it.)

Dealing Conclusions

The double dummy solver in Visual Deal is claimed to be fast and 99% accurate. DDS, employed by BridgeComposer, has no defects known to me. Thomas Andrews pointed out that, in certain pathological cases, it can take hours to process a single deal; he provided a particularly nasty example on his site. It seems safe to assume that DDS is 100% accurate.

Additionally, when I tell Visual Deal 15-17 and 9-10, I may get deals outside those HCP ranges: the program makes judgments about the quality of high card points. This may be a desirable feature in some circumstances, but not here. The difference between the results for Visual Deal and the other programs is of the magnitude of the key differences for many simulations.

- *Simulation results from Bridge Buff and Visual Deal are not reliable.*

In contrast, the dealing of DM Pro and Deal produced identical results over 5,000 deals. These two tools are both reliable for this basic case. However, I would not have been surprised to find a discrepancy here as well.

Before you can use the DM Pro simulator to generate actual deals, you must cause the program to store away master deals for it to reference. I did this, storing a million of them, which might be the maximum permitted. There is no visibility into what this actually means – you click some buttons and the count of stored deals increases.

I believe, but cannot prove, that this approach is deficient and is responsible for substantial discrepancies that I initially found in some simulations. When the pool of possible deals is reduced, highly specific cases can defeat the ability of the tool to produce random deals meeting the criteria. Furthermore, the idea of using a pool at all seems to be an artificial way of improving performance on old, slow computers. This is sort of like speeding up double dummy results by accepting only 99% accuracy. (It is possible that I did not use DM Pro correctly – it has a quirky interface that lends itself well to user errors – I still blame DM Pro, if that was the problem.)

- *Simulation results from Dealmaster Pro may not be reliable for highly specific cases.*

Finally, since the DM Pro and Deal results are identical on this basic case, where the suspected flaw in DM Pro does not apply, I am confident that Deal is a fine tool.

- *Simulation results from Deal have been demonstrated to be reliable.*

Working on my current project, I had countless hours of my time and days of computer time invested in simulations that used deals generated by Dealmaster Pro. I also did a good deal more work with Bridge Buff. Based on the comparison above, all that work had to be discarded.

Recommended Simulation Tool Set

- The way to create deals for Bridge simulations on Windows is with **Deal** and **ActiveTcl**, both free. For double-dummy simulations of a specific situation (e.g. opening lead), take advantage of **DDS** from Deal [something I have not done]. Dealmaster Pro would be an inferior and costly second choice to Deal.
- **ActivePerl**, powerful and free, is highly useful to glue together the simulation process. ActiveTcl would be a second choice, but it does not seem so hot for calculations.
- **BridgeComposer** and **GiB**, to play all deals in a PBN file. It uses any bidding and play (e.g. opening lead) in the file. All results are stored in the file, from which they may easily be extracted.

If you believe that double dummy simulations produce sufficiently reliable results, then you can dispense with BC, GiB, and maybe Perl. You could do it all with Deal and Tcl, with DDS. It looks like this is what David Bird and Taf Anthias did, for their books on opening leads.

Working on Linux? Perl and Tcl are native. Deal and GiB should run there, but BridgeComposer does not. As far as I know, no other software evaluated in this article runs on Linux.

Of all the commercial products mentioned in this article, the only ones I have purchased at the time of this writing are GiB, Bridge Composer, Bridge Buff and Dealmaster Pro. I have tried all the free tools and demos.