**Computer Bridge Evaluation Project 2021**

**About**

Computer Bridge Evaluation Project, for short CBE-Project 2020, was started by the owner of ComputerBridge.se. The CBE-Project has no connection to any international or national bridge organization. Neither has it any connection to/or are funded by any person or company selling/designing bridge program. It is solely a private "hobby" project and a part of the development of the Website ComputerBridge.se. CBE-Project 2021 is a continuation of CBE-Project 2020 with extended and new Tasks.

**People involved**

Initiator and Driver: Björn Hjalmarsson (Owner of ComputerBridge.se),

Sponsor: Owner of ComputerBridge.se 😊

Reviewer: N/A in 2021

*Programmer: Ray Spalding (Support programs)*

Link to the WebSite: [www.computerbridge.se](http://www.computerbridge.se/)

**Support Programs**

* Bridge Composer 5.89 - Ray Spalding
* TabulateScore (JS) - Ray Spalding
* TabulatePairScore (JS) - Ray Spalding
* TxtCvt (JS) – Ray Spalding
* Debut Professional 7.26 - NCH Software
* MacroRecorder 2.07p – Bartels Media
* NetBridgeVu – Fred Gitelman (BBO)
* Blue Chip Bridge Table Manager 6.7.1 – Blue Chip Bridge Ltd

**Computer Setup**

**Hardware**

* Intel NUC Hades Canyon with Intel I7-8909G CPU, 3 GHz and 16 GB Internal Memory
* ASUS Vivo MiniPC UN68U with Intel Core I7-8550U CPU, 2.0 GHz and 8GB internal memory.
* HP Spectre x360 Convertible 13 with Intel Core I7-8565U CPU, 1.99 GHz and 16GB Internal Memory.

**Operating System**

Windows 10 Home (64 bit) version 21H1

**Participating Programs**

The programs must support automatic or semi-automatic bidding and card play. They must also support storing of the bidding and card play in PBN or another format that can be converted to PBN format.

**The following programs meet the requirements and are included: Jack 6.1, Q-Plus Bridge 15.3, Micro Bridge 13.3, WBridge5 5.12, Blue Chip Bridge 6.71 and GIB 6.20.**

The following programs included in CBE-Project 2020 does not meet the requirements and have been excluded: GotoBridge19, Shark Bridge and Bridge Baron 29,

**Project Tasks and Implementation**

1. Team Contest with Random Deals.

2. Team Contest with Goulash Deals.

The play of the deals is now 100% automatic. It is done by using Macros run by MacroRecorder. The only program that supports full autorun is Blue Chip Bridge. All other requires Macros. With the automation the number of boards can be extended without any extra work. The number of deals has been extended from 100 in CBE-Project 2020, to 256 deals.

Using Goulash Deals is a new task, that was not implemented in CBE-Project 2020. The method is the same as in the CBE-Project 2020 "Track 1".

The programs play at one table and have their own pair as opponent. The result of the boards for the both pairs are compared against the Par result and added. The total score of the deals is then compared against the other programs score for the final result. More information about the scoring method in the Project Document for CBE-2020. The scores for the Random Deals are then adjusted by excluding too theoretical Par scores. The same method that was used in CBE-Project 2020.

Using Goulash Deals is a new task, that was not implemented in CBE-Project 2020. The same method is used as for Random deals.

The scores for the contest with Goulash deals are not adjusted.

The Random deals were generated in Bridge Composer. The Goulash deals were generated with the Bridge Hand Generator on [www.playbridge.com](http://www.playbridge.com/).

The configuration of the programs is the same as in CBE-Project 2020, except that the systems have been changed for some programs for better performance. Tests were made with different systems to find the optimal system. No change of the system configuration for Q-Plus Bridge. The maximum play of one deal is 120 seconds.

Program configurations:



3. Pair Contest

This is a new task, which was not implemented in CBE-Project 2020. In the Pair contest one program pair plays 102 boards against another program pairs at one table by using Table Manger. Only three programs support the Blue Chip Protocol (required to play with Table Manager) in the commercial versions, WBridge5, Q-Plus Bridge and Blue Chip Bridge and can participate in the contest. In total 3 rounds x 102 boards. The boards are from the Final in the Swedish Senior Pair Championship 2021. As it’s too few pairs for standard Pair scoring, the results from the Championship are used as reference for the scoring.

The configuration of the programs is the same as in the Team Contest for the Home pair, except that the programs are configured in MP mode. This is not possible in Blue Chip Bridge, so it plays in IMP mode to its disadvantage! The configuration for opposing pair is as near as possible to the opponents System.

Program configurations:



**4. Assessment of the program’s performance in the Team Contest**

An assessment is made of the performance of all Teams in the Contest with Random deals. All deals with -10 and more are included. The reasons for the losses are divided into three groups, Declarer Play, Defense and Bidding.

**Results from the Team Contest****s**

**Random and Gulash Deals –** **Results in PBN and CSV format**

WBridge5 Micro Bridge Q-Plus Bridge Jack GIB Blue Chip Bridge



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If other format, for instance HTML/LIN is needed, conversion can be made with the excellent program Bridge Composer, [www.BridgeComposer.com](http://www.BridgeComposer.com/)

**Total Result**

Random Deals Gulash Deals



The results show, excluding Jack and GIB, that the differences between Micro Bridge, WBridge5 and Q-Plus Bridge are minor. In a real contest probably all three have the capacity to win the World Championship Bridge Championship (WCBC). It’s also important that the WBridge5 version used in WCBC, is a little bit stronger than the free version used here. One top program that use to participate in WCBC is missing, Synrey Bridge. It’s a clone of Micro Bridge so the strength should be similar to Micro Bridge. Then it will be four programs that have a good chance to win WCBC in 2022. Bridge Baron and Shark Bridge belongs also to top programs, but it’s not known if they will compete in 2022. It would have been interesting to see how Argine (FunBridge) would manage. GotoBridge19 (stand alone version of Argine) have not done so well, but Argine has been improved the recent years. But the FunBridge team are not interested in competing in WCBC Championship, so we will not see Argine in WCBC if they don’t change their mind!?

It’s surprising that GIB and Jack performs so well. It shows that no major progress has been done in Computer Bridge programming in recent years. Maybe we will see a quantum leap in strength when Nukkai are ready with their work? But so far, no output from them, except a lot of words, how well they have done so far etc. etc. Time will tell.

For sure, it will be an interesting WCBC in 2022.

**VuGraph videos**

VuGraph videos with deal 1-64 from all matches with Random and Gulash deals have been recorded using NetBridgeVu as interface. The videos are available on YouTube, links:

Random Deals

[WBridge5](https://youtu.be/JcnKZVnAFlM), [Micro Bridge](https://youtu.be/CaNttBV2Vus), [Q-Plus Bridge](https://youtu.be/MpCFQXhjip4), [GIB](https://youtu.be/uRBCgncUXe0), [Jack](https://youtu.be/hgOJL2Wr-4Q), [Blue Chip Bridge](https://youtu.be/w2BPy2rmoT8)

Goulash Deals

[WBridge5](https://youtu.be/j2TRcgKxaAA), [Micro Bridge,](https://youtu.be/Bd3-fgZAoxg) [Q-Plus Bridge](https://youtu.be/yarxMrQ-yV8), [GIB](https://youtu.be/9rExCF5Onqg), [Jack](https://youtu.be/sxvQKRC4oYI), [Blue Chip Bridge](https://youtu.be/qOb5MvmJGvs),

**LIN files Deal 1- 64 - Random and Goulash Boards**

WBridge5 Micro Bridge Q-Plus Bridge Jack GIB Blue Chip Bridge





LIN files for deal 65-256 can be created from the PBN files with the excellent program Bridge Composer.

**Results from the Pair Contests, Deal 1-102**

**Results in PBN and CSV format**

Blue Chip Bridge vs Q-Plus Bridge Q-Plus Bridge vs WBridge5 WBridge5 vs Blue Chip Bridge

  

**Total Result**

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WBridge5 won convincingly with 57.62% before Q-Plus Bridge with 51.51%. In the Reference Contest only two pairs had more points than WBridge5! This of course not relevant as the programs didn’t meet any of the human pairs!

**The Result from the Reference Competition in PBN format**



**VuGraph videos**

VuGraph videos on YouTube, with deal 1-102 from all matches, links:

[Blue Chip Bridge vs Q-Plus Bridge](https://youtu.be/vSpnAA7yMhU), [Q-Plus Bridge vs WBridge5](https://youtu.be/pJsLpsdR6X8) and [WBridge5 vs Blue Chip Bridge.](https://youtu.be/TpLHz5h8yW8)

**Assessment of the program’s performance in the Team Contest**

Result:



The outcome is a bit surprising, that the Bidding is the reason for most losses, mostly overbidding and underbidding. There are of course also the losses below -10 to assess, but that I leave to interested developers to analyze…

**Opportunity for Improvements**

Only three of the programs included in the Project support the Blue Chip Protocol. Hopefully more programs will support the protocol in the future! It would make it possible to run more Real Bridge competitions and make the only present one (pair contest) more interesting.

There are two programs that belongs to this competition, Bridge Baron and Shark Bridge, that today does meet the requirement for automatic play and storing in PBN or another format that can be handle in the Project. Hopefully they will improve in this matter!?

It would be an improvement if the generated deals for the Team contest only have reasonable Pars, so it would not be necessary to adjust the deals. There are some ideas how to do this. I will try find a way forward in this matter together with Bo Haglund...

**Final Words**

Finally great thanks’ again to Ian and Hans for their valuable support in CBE-Project 2020 and Ray Spalding for utility programs in 2020 and 2021. Without this support It would not been possible for me to complete the Project!