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Happy Spring! As I type, croci, siberian irises, and the first daffodil are in bloom. Soon all will be in full flower, and then Spring will truly be upon us, or at least those of us who live in Massachusetts.

As President, I am expected to make a regular report on the state of our Society. I have been President since 2020, and am now facing election. What has happened in that time? The most important change is found in Mike Dyer's Secretary's report, in the last issue of The Kommandeur. At the end of 2019, we had under 500 active members. We are now closing on a thousand members. We see my Operation 100 Hexagons, announced on our web pages, coming to fruition, with a membership much larger than in years past.

Over the past four years, we had a considerable number of changes in officer positions. After many years, Omar DeWitt stepped down as Kommandeur Editor. I have helped shepherd the Kommandeur through three changes of Editor. Our new Editor Luiz Cláudio Silveira Duarte is giving us beautiful issues; may he long continue! Our new Secretary became seriously ill; Mike Dyer volunteered to replace him. Our new Vice President unexpectedly and tragically died; we are searching for a replacement. Finally, longterm Treasurer Brian Stretcher is stepping down from his post. I recruited my good friend Nick Sarwark to replace him.

Through all this, important activities such as Matching and Ratings have continued to function. Matching has in recent years become much more complicated. Once upon a time, we had play-by-paper-mail and face-to-face gaming. Now we have computer gaming. Software programs including Vassal, ZunTzu, and Cyberboard now put a game up on the screen and allow players to move pieces via mouse and keyboard. Once upon a time, computer games were played via file transfer, in which players emailed moves to each other. However, software can also be used in face-to-face gaming, in which players take turns at the keyboard and trackball, or virtual face-toface, a live game in which players can be half-a-world apart. In addition, there are more and more games designed for three, four, or more players. Fortunately,
we have members who understand these things and can support matching efforts.

When I became President, we had an old hand-coded-in-HTML web site whose operation was becoming increasingly cranky. In particular, the location of some of the key files was unclear. I called on the membership for support. Much good advice was given. Several unused features were discontinued. I brought up a much more modern site as a WordPress install on Bluehost. You can all see it at AHIKS. com.

Historically, we had three classes of membership. About half of our members were sent the Kommandeur by email. The other half of our members were expected, every two months, to go to the web pages and, at their leisure, download our newsletter. Finally, when we shifted over from paper newsletters to electronic newsletters, there were a very few members who did not have internet connections or use computers. These members continue to be sent issues of the Kommandeur, at their expense, by paper mail. We are now down to three such members; their ranks can never be increased.

With our email facilities there were a large number of pieces of diagnostic software. They revealed that almost no members were in fact downloading the newsletter from the web pages. Perhaps if they had been emailed, saying that the issue had been posted, more would have downloaded, but we didn't do that. In addition, spam shields became more and more picky, so that the then-editor had more and more difficulty sending issues to the membership, despite shifting internet provider. I shifted mailing to PHPlist as part of our WordPress install. I also started mailing the Kommandeur to every member. Now our Editor handles mailings.

The internet - social media - give AHIKS members new ways to talk to each other. They also give us new ways to advertise our existence. Once upon a time, we advertised in the AH General. (Indeed, we gained a new member, finally responding to publicity he saw in the General some sixty years ago.) We can now use social media opportunities to advance AHIKS.

I am obliged to concede that I have not been equally effective at everything. The number of matches and rated games has not risen as much as might have been hoped. I proposed a Game Design Bureau. Once upon a time, board wargamers spent much time designing their own games, or games they put into circulation on some limited scale. The International Federation of Wargaming magazine regularly ran new games designed by one member or another. That activity has attracted less interest than might have been hoped.

To continue my gaming report from the prior issue, we did solve the Titan Vassal challenges and are now playing. My unit counter recruiting efforts have been relatively unsuccessful. I am accustomed to the two-player game in which there is a lot of free space. In a four-player game, there isn't. I am now down to a grand total of one stack containing four pieces, so I anticipate that by the next issue of Kommandeur I will have been eliminated.

My Empires in Arms game is advancing. France offered a peace agreement to Austria. Austria had lost its capital, hence its ability to raise taxes, and agreed. The Anglo-Spanish alliance invaded France. English raids on Northern France were not entirely successful, but our invasion of southern France led to a large battle near La Rochelle. The battle was a draw...both sides' armies broke at the end of the first day of combat...but French losses were larger than the Coalition's.

Finally, I note that many of our officers are new, and have never really faced the membership in an election. For this reason, I asked the Officer Corps to apply our Bylaws such that the election ballot will list all eight elective offices and the candidates, even if there is only one candidate named for a post. There were no objections.

On a different note, in the absence of other candidates I am pleased to nominate my good friend Nick Sarwark for Treasurer. Nick, like our current Treasurer Brian Stretcher, is an attorney. He spent considerable time as a public defender. He also ended up as owner of a used car dealership. He now lives in New Hampshire with his wife Valerie and four children, aged $13,11,7$, and 5 . Family play reaches Risk, not yet hex and counter games.

AHIKS is the world's oldest and largest international board wargaming society. Our objective is to supply mature, reliable opponents for enjoyable board wargaming experiences, no matter whether you play face-to-face, over the internet, or via paper mail.
Membership in AHIKS is free. To join AHIKS, please visit https://ahiks.com/to-join/
We have a two-entry scheme, to minimize hackers and spammers.

## Elected Officers

President/Publisher: George Phillies. 48 Hancock Hill Drive, Worcester MA 01609. 508-754-1859 phillies@4liberty.net

Vice-President: now vacant, formerly the late Martin Svensson

Treasurer: Brian Stretcher. 117 Camellia Trail, Brevard, NC 28712. 828-774-8654 doctorlaw@juno.com

Rating Officer: Dave Bergmann. 429 Countryside Circle, Santa Rosa, CA 95401. opusone1945@sonic.net

Secretary: Mike Dyer. Nakhon Nayok, Thailand. porkbelly00@gmail.com
Judge: Randy Heller. 113 Tolend Rd, Barrington, NH 03825. rgheller50@aol.com

Match Coordinator: Mark Palmer. 113 Warm Wood Lane, Apex, NC 27539. remlap919@outlook.com
Editor: Luiz Cláudio Silveira Duarte. Pontal do Paraná, PR, Brazil. +5561-99173-4906 l@@lcduarte.com

## Appointed Officers

Archivist: William A. Perry. 21 Fitzgerald Lane, Columbus, NJ 08022.609-298-9823 bpilot8@comcast.net

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Multiplayer Coordinator: Jeff Miller. 263 Buchert Road, Gilbertsville, PA 19525.610-367-8209 blachorn1@gmail.com

Unit Counter Pool: Brian Laskey. 162 Hull Street, Ansonia, CT 06401.203-732-1009 raftman666@gmail.com

Game Design Bureau: Jeremy Rowley. jerowley@yahoo.com
Membership Recruitment Officer: Open
Social Media Coordinator: Open

## In memoriam

On the evening of the last day of February, our President sent the following message.
Fellow members of AHIKS!
I am saddened to report that Martin Svensson, Vice
President of AHIKS, passed away this afternoon.
It is my understanding that he fell last Sunday, had significant injuries, and had been on major life support ever since.

When a call was made for support of the AHIKS Officer Corps, he answered the call.
In the Mystery of Death, all men are initiates.
May he rest in peace.
George Pbillies
President, AHIKS
We received several messages of condolences, and George has asked me to publish them, as a memorial to our dear Vice-President.

My sincere condolences to all who knew him. John Thornton

Rest in peace my friend and fellow gamer! Sincerely
Mark R Schaeffer

Vaya con Dios, Martin!
Mark Sturdivant

Eternal rest grant unto him, O Lord, and let perpetual light shine upon him. May bis soul and all the souls of the faithful departed, through the mercy of God, rest in peace.
Amen.
Brian Lucid

A sad day indeed.... and a buge loss to the AHIKS community. Condolences to his direct family. Angelo Valeri

My deepest condolences...
Dave Bowman

I am sorry to hear about Martin's passing.
I did not know him.
I am sure he will be missed.
Bert

Please pass along my condolences to bis family, and bis gamer family in AHIKS.
Thank you for letting me know.
Russ Gifford
Condolences and gratitude. David McCarty

Please pass on to Martin's family my sincere condolences from Down Under.
Thanks George.
Brad Golding
May His God bless him.
Kevin Keenan

Thank you for the courtesy of letting us know, Gentlemen.
We will keep his family and his memory in our thoughts.
In addition to being yet another reminder to appreciate the gift of life every day we are given it, accolades to a gentleman who saw a need and stepped up to fill it for the benefit of his colleagues in the hobby. All honors to the memory of the man and his sense of commitment.
Tom Marshall \&

From the Editor: Last Post

A few weeks ago, we lost our Vice-President. I had not the pleasure of ever meeting Martin Svensson, and our e-mail contacts were all too brief. But I was touched by one of the memorial messages which we received; I'll tell about it in a moment.

First, I wish to remember another veteran wargamer who recently passed away. Rich Velay was not an AHIKS member; but Europa players knew him as the Europa Rules Guru. He was especially, and deservedly, known for his skill and deep knowledge of the Second Front game.

The memorial message which touched me was by Tom Marshall: "accolades to a gentleman who saw a need and stepped up to fill it for the benefit of his colleagues in the hobby. All honors to the memory of the man and his sense of commitment."

This high praise also fits Rich to a T. Furthermore, I'm sure that most of us surely know many other such people. The strength of our hobby does not lie in armor stacks, or even in the history which we strive to recreate. It lies in us, and in the ties which bind us together.

Martin and Rich knew that. So do many others - people who toil, tirelessly and happily, to enhance the enjoyment of the games we love. They help other people become players, or better players; whether by bringing them together, or by easing their understanding of the rules.

The play's the thing. And there can be no play without players. I deeply respect, and applaud, all who work to help bring this glorious thing to light.

Fortunately, their work is not always thankless. But, even when at its most invisible, they find their reward in a gleam in the eye of a player, in the delight of a well-executed maneuver, in the happiness of knowing that we will play again.

Thank you, always, for putting gleams in our eyes. Ave atque vale!

## Luiz Cláudio Silveira Duarte

## Elections!

As we announed in the last issue, this year we will have our elections.

AHIKS has eight elected officers -President, Secretary, Treasurer, Editor, Judge, Match Coordinator, Ratings Officer, and VicePresident (By-Laws VI.D).

So far, we have the following candidacies submitted:

- George Phillies for President;
- Mike Dyer for Secretary;
- Nick Sarwark for Treasurer;
- Luiz Cláudio S. Duarte for Editor;
- Randy Heller for Judge;
- Mark Palmer for Match Coordinator;
- Dave Bergman as Ratings Officer.

No candidacies for Vice-President have been submitted yet.

Further nominations may be submitted, in writing (email is good), to the President (George Phillies, phillies@4liberty.net) and the Editor (Luiz Cláudio Silveira Duarte, lc@lcduarte.com). The nominee has to indicate his willingness to serve if elected.

The deadline for nominations is MAY 15, 2024. A full list of nominations will appear in the June issue of The Kommandeur.

The ballot will appear in the August issue of the The Kommandeur. Votes must be sent to the President by email or papermail by September 25, 2024.

The full election bylaw was published in the previous issue, and it is also available at our page on the Internet (https://ahiks.com/ ahiks-by-laws-ix-xi-elections-dues-removal-of-officers/).

# Optional rules for Second Front 

John M. Astell


#### Abstract

John M. Astell is one of the leading designers of the Europa wargames. He published these rules as a tribute to Rich Velay, and he has graciosuly allowed its publication here.


Next issue, we will have another contribution by John.
-- Luiz Cláudio

In memory of Rich Velay, elite Second Front player, here's a couple of new optional rules for that game.

## Strategic Air War Effects: Aviation Fuel Shortages

Historical Note: As Axis aviation fuel shortages increased in the final periods of the war, they began to affect the ability of Axis air units to escape from airbases about to be captured by the enemy. For example, many hundreds of aircraft were lost on the ground in 1945 during the western Allied and Soviet advances. While the Strategic Air War rule shows aviation fuel shortages affecting the operations of Axis air units, it did not cover the effect on air unit escape. The following optional rule does.

Modify the air escape die roll for Axis units as follows:
+1 if Axis aviation fuel is at $50 \%$ or $33 \%$
+2 if Axis aviation fuel is at $25 \%$

## Luftwaffe Reduction

(Release of Luftwaffe Support Personnel)
Historical Note: As the Allies captured territory in Germany, the Luftwaffe had fewer airbases, fewer places that needed AA protection, and so on. This meant it needed fewer support personnel. The Luftwaffe accordingly released many thousands of support personnel for other duties. According to one work, the Luftwaffe had a personnel total of about 2,800,000 in August 1944, declining to abut 2,300,000 by 15 Dec. 1944 and about 1,800,000 by 1 April 1945 (see Sources, below). Some of this reduction was due to combat losses in Luftwaffe ground and air units, and some was also due to Luftwaffe support and AA personnel being taken prisoner in territory captured by enemy. However, substantial numbers released
for other duties. Technical specialists were sent to bolster German industry, but the bulk of the released personnel were sent to fight as infantry in the Army, SS, and Luftwaffe parachute troops. As infantry, their military contribution was low: almost none of these men had prior infantry training, and the situation was so dire that the Germans were mostly unwilling to spend the time training them. The following optional rule covers this situation.

In any Axis initial phase in which one or more cities in Greater Germany is Allied-owned, the Axis player may announce the Luftwaffe is being reduced in size. The Axis player receives Luftwaffe personnel points (LwPPs) equal to the airbase capacity of the Allied-owned cities. Place a LW Depleted marker (make up your own!) at each of these cities. Once Luftwaffe Reduction has been announced, each time the Allies subsequently gains ownership of a city in Greater Germany, in the next Axis initial phase the Axis player receives LwPPs equal to its airbase capacity and places a LW Depleted marker on the city.

In the Axis initial phase, the player may use LwPPs as follows:

A LwPP may be converted to one German inf RP.

A LwPP may be sent into training for four turns. In the Axis initial phase four turns after it was sent into training, the Axis player receives two German inf RPs. /Example:/ A LwPP is sent into 4-turn training on Feb II 45. The Axis player receives two German inf RPs on Apr II 45.

A LwPP may be sent into training for six turns. In the Axis initial phase six turns after it was sent into training, the Axis player receives three German inf RPs. /Example:/ A LwPP is sent into 6-turn training on Feb II 45. The Axis player receives three German inf RPs on May II 45. Oops, the war ended on May I 45, too late.

One the Axis player announces Luftwaffe Reduction, the following conditions are in effect:

If the Axis player recaptures a German city with a LW Depleted marker, the city does not regain its Axis intrinsic AA strength. Instead, it has 0 intrinsic AA strength. Also, due to lack of support personnel, the Axis player may not use the city's airbase capacity.

Due to lack of support personnel, the Axis player may not build permanent airfields. (The Axis player may still build temporary airfields.)

Two Luftwaffe parachute-infantry divisions in the Axis OB for 1945 were actually formed mostly with personnel released from the Luftwaffe support personnel. Accordingly, the Axis OB is modified as follows: Ignore the Mar I 45 OB entry for the 6-8-8 Para-Inf XX 10 (LW) and the Apr I 45 OB entry for the 6-8-8 Para-Inf XX 11 (LW). Instead, each unit became available to be formed when the Axis player announces Luftwaffe Reduction. In any Axis initial phase on or after Luftwaffe Reduction had been announced, the Axis player may begin forming either or both of the units as follows:

The Axis player must spend 2 LwPPs to begin forming a 6-8-8 Para-Inf XX. The Axis player chooses the WK in which the unit is forming: any WK can be chosen as long as the player owns at least one city in the WK.

Once the LwPPs are spent for the unit, it is forming ("Forming" per the reinforcement rules). The standard rules for forming apply (for example, early activation or being lost if the Allied player captures all cities in the WK).

The unit becomes full strength ("Full" per the reinforcement rules) six turns after it starts forming. For example, the Axis player pays 2 LwPPs on Feb I 45 to start forming the 6-8-8 Para-Inf XX 10 (LW) in WK XVIII. It becomes full strength on May I 45.

Further Notes: There should be a way for the Axis player end Luftwaffe Reduction and recover from it, if the military situation turned in favor of the Axis. Since this seems like a remote possibility, I leave it for the players to add if they wish.

Some thoughts on this: The Axis player can announce the end of Luftwaffe Reduction, whereupon cities lost in Germany no longer generate LwPPs
and do not get LW Reduced markers. Axis-owned cities that have LW Reduced markers can have them removed by the Axis player spending LwPPs on them, as the same rate as the cities generate LwPPs. When a city has the LW Reduced marker removed, it regains Axis intrinsic AA and it may be used as an Axis airbase. One all the LW Reduced markers are removed, the prohibition on the Axis building permanent airfields is removed.

The Axis player can convert German inf RPs to LwPPs , as a rate of 3 inf RPs for one LwPP. Probably there should be a way to get a small trickle of "free" LwPPs , representing the LW rebuilding itself via the civilian economy. This should be quite limited, given that the economy is likely in bad shape and that it would take some time to rebuild the LW.

## Sources

LW personnel strength is from W.H. Tantum IV and E.J. Hoffschmidt (editors); The Rise and Fall of the German Air Force (1939-1945); 1969. Much of the information was compiled from LW records the British captured in 1945 together with wartime British air intelligence reports on the LW, in some cases using the assistance of 1960s RAF personnel who had been air intelligence officers in the war.

The book lists higher personnel strengths for the LW (2,800,000 in August 1944) than other sources do. I suspect the discrepancy may in part be related to how AA personnel in Germany are counted. A lot of the Germany homeland AA was staffed by civilian paramilitaries (often teenagers at least in the later war years), under the supervision of relatively few LW officers.

The book's total likely included these personnel as LW, while other works may not. For example, https://www.feldgrau.com/WW2-Germany-Statistics-and-Numbers/ lists:
In Luftwaffe Service, 1944: 1,500,000+ In Luftwaffe Service, 1945: 1,000,000+

These are obviously estimates and the " + " suggest they may not be very accurate. It seems likely they figures do not include the AA paramilitaries. No sources are given for the figures. Specific dates for 1944 and 1945 figures are not given, another problem. Nonetheless, feldgrau.com shows a decline in LW strength of 500,000 from 1944 to 1945 . This cannot be due just to losses, as the site lists the total LW casualties for 1939-1945 as 485,000+. \&

# Sam's Britain Vacation 

Sam Thornton

Last October my wife and I finally got to take our long awaited, and many times delayed, vacation to Great Britain. We traveled to Scotland to visit family and also visited some friends on the Suffolk coast. We enjoyed a great week in Bath staying on a narrowboat and some time in London. While in London we toured the Cabinet War Rooms and the London branch of the Imperial War Museums (IWM). In the K 58-6 issue


Omar had a great review of his trip to the War Rooms so I'll not say much about it except that given the opportunity, you should take the walking tour prior viewing the bunker. It gives a great amount of context. During our tour it was pointed out that a bomb had just been discovered under a flower bed in St. James park immediately across the street from the entrance to the War Rooms. The tour also pointed out where bomb damage had occurred and you can still see shrapnel damage on many buildings, giving you a real feel for the trauma that Londoners experienced during the Blitz.

A little about the Imperial War Museums. There are actually a series of five branches in Britain, with related museums throughout the Commonwealth. The IWM consists of the HMS Belfast moored on the Thames, the Duxford aviation museum, IWM North in Manchester, and the Cabinet War Rooms. The original London museum was established during WW1 and now covers history from that period to modern. The museum has a large collection of military hardware but also includes period art, photos, and even an immersive experience of life in the WW1 trenches. There are also temporary exhibitions of specific events. "The Troubles" in Northern Ireland were featured while we were there. There seemed to be an emphasis on first person stories from soldiers in the front lines to make the experience more relatable.

Arriving and walking up to the museum one is immediately struck by the enormity of the set of 15 inch guns guarding the front entrance. These guns were acquired as part of the museum expansion in the Sixties. I had read about how large they are and had seen photos, but nothing compares to how they look up close. Wow!


When you first enter to the building you see the main atrium. There is equipment on the floor level with aircraft suspended above. A Spitfire that actually flew during the Battle of Britain, as well as a V2 rocket and a Harrier jump jet from the Falklands conflict, are in view. They are impressive, but I was most taken by the Japanese Ohka jet. I did not know Japan had operational jets that made it into battle but seventeen of these aircraft were captured intact at the end of the war. These Kamikaze aircraft were responsible for sinking several Allied ships in the Pacific.

While at the museum take a walk through the gift shop for an amazing array of books and postcard reproductions of wartime posters. Impossible to get out without buying something! My wife and I both thoroughly enjoyed the visit and would recommend that anyone traveling to London stop in for a visit. Seeing the rest of the branches is now definitely on my next itinerary. \&

A Spitfire and an Obka jet in the atrium of the museum.


Montgomery's personal command vehicle, which he used in North Africa.

# The Press Room 


Via Carrier Pigeon from the Danish coast

May, 1807

After three months of intense diplomatic negotiations between the Czar's emissaries and the Democratic National Alliance of Denmark (DNAD) regarding release of King Christian VII, progress remaines at a standstill. A Russian troop ship set sail from Riga to the Hanover coast in April just as DNAD requested a third party proxy (Great Britain) to broker a deal. Over the negotiations continue with the British Foreign Office trying to convince the rebels to release the King and accept self-exile into Malmö, Sweden under their protection. If this works, many thanks to the Admiralty in averting unnecessary loss of life and helping restore the Danish Monarchy. The 4th Russian Marine battalion stood down and returned home in June.

As for the remainder of Europe, "carnage" is the only word to describe reports from the front between France and the British-Austrian-Spanish alliance. Although France is on the defensive, its superior troops/leaders made "mincemeat" of the early Austrian and Spanish invading forces and the French Corps besieging Prague and Vienna succeeded in breaching the city walls; Austria was forced to capitulate putting His Most Catholic Majesty in a pickle. His Grace Napoleon offered Austria lenient surrender terms and granted an open hand in Italy. British troops arrived in Cherbourg and near the Alps in March and combining with Spanish remnants on the other coast that now form a formidable relief force. And, Paris itself is may be under siege with Field Marshall Messina leading the home guard garrison. There is also a huge battle in the wings near Orleans that could determine the final outcome of this alliance's actions.

Rumblings of Prussian inclusion into the bloody fray now circulate freely in Berlin and London with Marshall Blucher readying his troops along the Hanover border. All this with Turkey sitting idly by defending her northern border with Russia, who continues to honor her peace agreement and remain neutral. The Czar is content in building defense forces for the home guard. It will be interesting to see what new map borders emerge from this conflict.

## 1st Lientenant Sergei Markorgki

adjutant to Field Marshal Nikolai Kutusov
(aka Angelo Valeri AHIKS 2030) \&o

## WAR

Why subscribe to War Diary Magazine? Well, because we are different.
Unlike most other gaming magazines, we are actually a wargaming magazine, not a history magazine that happens to include a wargame. Each issue is packed with actual wargaming content, including game analysis, reviews, articles on good play, and more! We are also fully independent, which means that you'll be reading unvarnished reviews and articles since we are not beholden to any single game publisher.

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For more information or to subscribe, please visit our website. We'll thank you, and hopefully you'll thank yourself as well.

wardiarymagazine.com

## 2023 ratings [again!]

Dave Bergmann

Last issue, we published the list of the top 25 rated members.
However, we made a mistake: the list was unordered.
Dave has sent me the corrected spreadsheet, which we publish here, with our apologies.
-- Luiz Cláudio

TOP 25 LIST OF RATED MEMBERS UP TO DECEMBER 31, 2023. A RATING QUALIFIER OF "C" OR GREATER IS REQUIRED TO BE ELIGIBLE. YOU MUST HAVE COMPLETED A GAME WITHIN THE LAST 5 YEARS. \&


| 1 | HELLER | 1007 | 1845 | 80 | N | 25 | L | 17 | K | $10 / 22 / 2023$ |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2 | UNNERSTALL, JAY | 1264 | 1830 | 26 | G | 12 | H | 9 | H | $12 / 10 / 2023$ |
| 3 | DANDY, GRAEME | 916 | 1730 | 20 | G | 11 | H | 11 | I | $10 / 8 / 2022$ |
| 4 | MILLER, JEFF | 1303 | 1725 | 104 | Q | 34 | N | 41 | S | $10 / 17 / 2023$ |
| 5 | JERKICH, LOU | 544 | 1685 | 16 | F | 7 | F | 6 | F | $11 / 10 / 2022$ |
| 6 | WHITE, MARK | 842 | 1650 | 16 | F | 4 | D | 10 | H | $8 / 5 / 2020$ |
| 7 | KLITZKE, WILLIAM | 305 | 1645 | 232 | X | 61 | S | 39 | R | $3 / 23 / 2021$ |
| 8 | DEWITT, OMAR | 44 | 1610 | 110 | Q | 34 | N | 35 | Q | $9 / 11 / 2020$ |
| 9 | MITCHELL, MICHAEL | 1086 | 1590 | 7 | D | 4 | D | 5 | E | $9 / 11 / 2020$ |
| 10 | SANDER, JAMES | 1339 | 1580 | 33 | I | 8 | F | 5 | E | $4 / 3 / 2018$ |
| 11 | BERGMANN, DAVE | 854 | 1570 | 21 | G | 11 | H | 6 | F | $8 / 10 / 2022$ |
| 12 | STRETCHER, BRIAN | 885 | 1555 | 82 | O | 31 | I | 34 | Q | $8 / 10 / 2022$ |
| 13 | GRILLS, JOE | 748 | 1480 | 133 | S | 44 | P | 41 | S | $7 / 24 / 2019$ |
| 14 | SCARBOROUGH, TOM | 1345 | 1460 | 157 | T | 39 | O | 15 | K | $7 / 24 / 2019$ |
| 15 | LASKEY, BRIAN | 1435 | 1365 | 20 | G | 9 | G | 8 | G | $8 / 29 / 2018$ |
| 16 | SAUNDERS, SCOTT | 1664 | 1355 | 18 | F | 13 | H | 6 | F | $9 / 17 / 2021$ |
| 17 | WARNICK, PAUL | 1430 | 1355 | 33 | I | 11 | H | 9 | H | $10 / 9 / 2018$ |
| 18 | DOWREY, BOB | 1507 | 1355 | 10 | D | 11 | H | 6 | F | $8 / 10 / 2022$ |
| 19 | PATIENCE, ANDREW | 1646 | 1345 | 7 | D | 7 | D | 7 | D | $1 / 31 / 2020$ |
| 20 | LEONARD, CHUCK | 711 | 1345 | 116 | R | 23 | K | 5 | E | $9 / 30 / 2020$ |
| 21 | HYLAND, CHRIS | 1234 | 1342 | 10 | D | 7 | F | 5 | E | $9 / 20 / 2022$ |
| 22 | HOFFMAN, JOHN | 884 | 1340 | 21 | G | 8 | F | 8 | G | $9 / 23 / 2023$ |
| 23 | BAYLISS, MARK | 1666 | 1310 | 32 | I | 13 | H | 7 | G | $1 / 26 / 2021$ |
| 24 | LADNER, CRAIG | 1562 | 1295 | 12 | E | 4 | D | 5 | E | $12 / 7 / 2019$ |
| 25 | BEST, BOB | 552 | 1280 | 77 | N | 13 | H | 22 | M | $3 / 23 / 2021$ |

# Multiplayer Info 

## Jeff Miller

## Hi Gang,

So, spring has arrived and the outdoor stuff has started to eat into playing time as usual.

However, there is still time to fit in some gaming.
There are several games that are only 1 person away from launching, so take a look and see if you have what it takes to outwit more than one player at a time. ©

On to the personal front.

## A Distant Plain Coalition - Extended Scenario

The second propaganda card arrived sooner than expected - disrupting my well-laid plans.

However, we are starting to make some progress. A well-planned move by the government set up the Taliban for a bloodbath as the Coalition, along with government troops, took out an entire province of Taliban terrorists - including two bases.

But the warlords are shipping poppies as fast as they can grow them and is starting to get out of control.

Afghanistan is just not a civilized place!

## Conquistador Spain

England continues to look like the main problem as his treasury overflows with coin - something like 200 pieces of eight in his reserve fund!

The rest of us poor souls are scratching out a bare existence on his leavings.

## Empire in Arms Prussia - June of 1807

Sadly, Austria has been forced to bend the knee again to the evil French.

On the more positive side, Spain and England have invaded France and are bleeding out quite a few French rabble. Losses are high on both sides but so far, the good guys are holding their own.

Oh yes and the French navy would have trouble finding a rowboat that would still float!

Russia has moved troops off the Prussian border but they have moved south so Prussia is concerned for their good ally Turkey.



Meanwhile brave and honorable men are flocking to the Prussian army as it rebuilds to face the French once again.

## Gunslinger [Non-AHIKS] - Marshall

Very interesting game - the Border Rider picked off three from the rooftop of the stables, the Dude took out the Mountain Man leaving only three standing.

The Marshall is facing down the murderous Dude in the street, only one of us will walk away.

Meanwhile the Border Rider is slinking through the buildings in an attempt to take out the last one standing.

## Here I Stand France - 1540 to 1543

As we move into a new turn the situation is getting interesting.

The French war of retribution on the Hapsburgs for a vicious attack on turn 1 continues.

The Ottomans have crushed the Habsburgs on the eastern front - leaving the Hapsburgs with no leaders that are not in a dungeon someplace.

Despite England's best efforts the Hapsburg still have a flow of treasure coming from the New World, but we shall see what the next three years bring.

The Pope and the Protestants are having their own fight as the Pope also tries to aid the Hapsburgs.

England remains above the fray - at least so far, although he did have a bit of religious turmoil to deal with in Merry Olde England.

I predict a bloody three years ahead as the French army and navy are still intact.

## Kingmaker Portcullis

Sadly, and unwisely, I agreed to attend Parliament at Milford Haven, trusting in the honor of the nobles of England.

Silly me for trusting in said honor, I will be lucky to escape back to my island with my head still on my shoulders.

## Merchant of Venus Humans

Sadly, the game has ended, and the Humans failed to rise to the occasion.

Discussions are underway for a long game next
with combat - not that the humans would ever attack someone. ©

## Stellar Conquest Blue

Space is starting to get crowded and my scouts report strange alien species out there. [We are playing with hidden movement which is great!]

Hopefully peace will reign, but just in case where did I put the plans for the Death Star?

## Titan Black

Titan is up and running - I had forgotten just how much fun this one is.

So far Gold is down to one legion as he went on an offensive against multiple legions [including one of my peaceful ones] and they did not go well.

The other three of us are still maneuvering and building as Gold tries to rebuild.

## Non-Multiplayer

ASL - Rommel at the Meuse French - May 13, 1940

Morale of the story here is try to avoid setting up games with non-AHIKS members.

Yes, a vanishing opponent just when things were starting to heat up!

So, anyone up for a CG game of this one let me know, it is quite the gem.

## ASL - Darwn of a New Age Poles - September 1,

 1939The Germans have been driven to risking their armor bogging down as they smash paths through the woods to try and flank the valiant defenders.

But can they survive the infantry closing in on them while the German troops are pinned down and blocked by harassing fire from Polish artillery?

## ASL - Drop Zone: Sainte-Mere-Eglise CG III American - June $6^{\text {th }}$ Morning

We have just wrapped up the mornings combat with little result for either side.

But we are regrouping for the next round which I expect to be far bloodier!

## ASL - Kampfgruppe Peiper CG I Clash at Stoumont American - December 19, 1944 PM

The Germans are brushing aside my screening forces but my reinforcements are nearing the Sanatorium at last.

From there we hope to bring the German horde [which happen to be fanatics this day - or more likely they were given a liberal supply of schnapps] to heel.

## ASL - Red Barricades CG III Russian - October 20, 1942

It is going to be a very bloody day - the Germans spent a lot of points purchasing an engineer section with DC and Flamethrowers.

That plus quite a few critical hit rolls have pushed hard at the Russian lines.

Casualties are high however from close combats on both sides. But the Russians cheer every time they cut down the fiendish German engineers. Soon there will not be any left alive.

We are practicing a scorched earth approach at this point - buildings and factories have been set ablaze to slow the Germans. My opponent does not have access to the upgraded rules in Red Factories so we are going with the original so kindling is still an option.

## ASL - Sword and Fire CG V American - February 15, 1945

We are off and running as the Americans carefully move in from three directions - so far, the Japanese have practice amazing fire discipline and no shots have been fired.

Perhaps they will just give up? ())

## The Civil War 1861-1865 Union - Turn 8

I must admit the Union is really struggling with this one. I just cannot seem to find a way to move the needle.

Thought I had a shot to take out a state - but then the turn ended. $:-$

## Combat Commander German - Bridge HuntNisava River Yugoslavia April 7, 1941

Who knew the Greek conscripts were so brave and my Germans such poor shots!

Still, we are not done yet.

## The Dark Valley - German

Another new system for me to get a grasp on, still on the first turn and I am already realizing things I should have done differently!!

I should really run a solo game or pull up some videos instead of just jumping in cold turkey. But what's the fun in that. ()

## Pacific War USN - Guadalcanal Battle Scenario November 12-15, 1942

Loving this one, has some very interesting dynamics to it. Looking forwards to the full campaign but I am glad we started off small first!

So far, my lads have been lucky - we got in a surprise attack on his carriers, fair amount of damage but no sinkings.

During the following night we slipped away as he pursued with his superior surface fleet.

But as dawn broke, we found his fleet again and launched another air strike.

With luck at least one of his CV's will no longer be in the war at the end of the day!

## Source of the Nile

We have wrapped this one up as my explorer made it back to England alive with enough points to pull out the win.

Loaded with trophies, tales of strange tribes, descriptions of amazing mountains and waterfalls and daring escapes. ())

My opponent was cursed by the cards, he kept drawing disasters - I was feeling sorry for the poor lad.

So, the test game is over, would love to start one with a few more players.

It is easy [once you figure out the rivers] and a very different experience from the usual wargame.

## Trireme Romans - Economus - 256 BC

We are into a lot of boarding actions now as ships have rammed and grappled.

Sorting through the rules as there are some gaps here and there - the joys of old rule sets. ())

## UP Front Germans - Meeting of Patrols

The Americans are pushing hard on my left flank and my machine gun crew has been buried under wire of all things!!!

Once we get that sorted out, we anticipate dead Americans as they are now in range for the full force of the machine gun to be felt.

## Vietnam NFL - Full campaign - 1965 Winter

The dance continues as the Americans try and land a blow on the ellusive freedom fighters.

We have managed to liberate some capitals from the imperialist dogs, but have had to retreat as full marine divisions backed by massive airpower is a bit much for my poor lads.

## War and Peace [One Small Step version] - Wagram Allies - 1809

Still fighting with sorting out some rules - the Avalon Hill version is much cleaner rules wise! I would recommend that version over this one even if the graphics are improved.

Regards, Jeff. \&o

## Match Requests [multiplayer]

| Game | Publisher | Player | Format |
| :--- | :--- | :--- | :--- |
| Advanced Civilization | AH | Jeff Gual | V |
| Advanced Civilization | AH | Eric Aune | V |
| Advanced Civilization | AH | Erica Snarski | V |
| Advanced Civilization | AH | Jeff Miller | V |
| Age of Rennaissance | AH | Jeff Miller | V |
| Air Force | AH | Mark Palmer | E,P |


| All Bridges Burning | GMT | Jeff Miller | V |
| :---: | :---: | :---: | :---: |
| Amoeba Wars | AH | Jeff Miller | V |
| Ancient Civilizations of the Inner Sea | GMT | Jeff Miller | V |
| Ancient Civilizations of the Inner Sea | GMT | Erica Snarski | V |
| Andean Abyss | MMP | Jeff Miller | V |
| Angola | MMP | Jeff Miller | V |
| Angola | MMP | Nick Rush | V |
| Angola | MMP | Tom Liakos | V |
| Axis and Allies 1914 | Hasbro | Scott Mcaninch | E |
| Battle for Germany | SPI | Mark Palmer | V |
| Battle for Germany | SPI | Chris Hyland | V |
| Blackbeard | AH | Jeff Miller | V |
| Blitz | Compass | Jim Lauffenburger | V |
| Circus Maximus | AH | Jeff Miller | V |
| Circus Maximus | AH | Graeme Dandy | V |
| Circus Maximus | AH | Robert Dowrey | V |
| Circus Maximus | AH | Erica Snarski | V |
| Clash of Cultures | Z-Man | Jeff Miller | V |
| Colonial Twilight | MMP | Jeff Miller | V |
| Conquest of Paradise | GMT | Jeff Miller | V |
| Conquistador | AH | Jeff Miller | V |
| Crown of Roses | GMT | Mike Kettman | V |
| Cuba Libre | GMT | Jeff Miller | V |
| Divine Right | TSR | Delwayne Arakaki | V |
| Dominant Species | GMT | Jeff Miller | V |
| Dominant Species | GMT | Nacho Fernadez | V |
| Dune | AH | Jeff Miller | V |
| Dune | AH | Brian Nickel | V |
| Dune | AH | Chris Hyland | V |
| Empires of the Middle Ages | SPI | Mike Kettman | V |
| Falling Sky | GMT | Jeff Miller | V |
| Falling Sky | GMT | Jim Lauffenburger | V |
| Fire in the Lake | GMT | Jeff Miller | V |
| Fire in the Lake | GMT | Steven Paul | V |
| Fire in the Lake | GMT | Jim Lauffenburger | V |
| Flat Top | AH | Chris Hyland | V, D, G, H, X |
| Fortress America | MB | Jeff Miller | V |
| Gangsters | AH | Jeff Miller | V |
| Gandhi | GMT | Jeff Miller | V |


| Gunslinger | AH | Jeff Miller | V |
| :---: | :---: | :---: | :---: |
| Gunslinger | AH | Graeme Dandy | V |
| Gunslinger | AH | Matt Scheffrahn | VMG |
| Incredible Victory | Quarterdeck Games | Paul Raphael | E, G |
| Liberty or Death | GMT | Jeff Miller | V |
| Machiavelli | AH | Jeff Miller | V |
| Machiavelli | AH | Graeme Dandy | V |
| Machiavelli | AH | Nacho Fernadez | V |
| Magic Realm | AH | Jeff Miller | V |
| Napoleonic Wars | GMT | Aaron Martin | V |
| Napoleonic Wars | GMT | Jeff Miller | V |
| Pendragon | GMT | Jeff Miller | V |
| Plains Indian War | GMT | Jeff Miller | V |
| Republic of Rome | AH | Jeff Miller | V |
| Samurai | AH | Delwayne Arakaki | V |
| Source of the Nile | AH | Jeff Miller | V |
| Source of the Nile | AH | Steve Duboyce | V |
| Spies! | SPI | Erica Snarski | V |
| Successors | AH | Jeff Miller | V |
| Time of Crisis | GMT | Jeff Miller | V |
| Time of Crisis | GMT | Derek Lenard | V |
| Versailles 1919 | GMT | Aaron Martin | V |
| Versailles 1919 | GMT | Derek Lenard | V |
| Virgin Queen | GMT | Jeff Miller | V |
| War and Peace | OSS | David Turansky | V |
| War of the Suns | MMP | Jeff Miller | V |

## Format codes:

A: ADC2
C: Cyberboard
D : Discord
E: Email
F : Fast Play
FTF : Face-to-face
G: Will Gamemaster
H: Virtual Face-to-face

L: Learning Game
P : Postal Mail
S : Slow Play
I : A.C.T.S..
V:VASSAL
X : Non-rated Game
Z:Zuntzu

## Open Match list

Mark Palmer

| Game | Publisher | Player | Format |
| :---: | :---: | :---: | :---: |
| 1813: Napoleon's Nemesis | Europa Simulazioni | Erica Snarski (1251) | VE |
| 1985: Under an Iron Sky | TRL | Martin Hogan (1704) |  |
| 2nd Fleet | Victory Games | Thomas Ten Eyck (826) | E |
| 3rd Fleet | Victory Games | Thomas Ten Eyck (826) | E |
| ACW Brigade Series | MMP | Aaron Kulkis (1983) |  |
| Admiral's War | Canvas Temple | Jan Vanderveken (2286) | VE |
| Advanced Squad Leader | AH | Frank Kelly (2405) | VE |
| Advanced Squad Leader-Campaign | AH | Jeff Miller (1303) | VE |
| Advanced Third Reich | AH | Mike Scott (1555) | E |
| Afrika Korps | AH | Omar Dewitt (44) | V |
| Afrika Korps | AH | Randy Heller (1007) | FTF |
| Air Assault on Crete | AH | Peter Hansen (2129) | V |
| A Most Dangerous Time | MMP | Jeff Miller (1303) | VE |
| Antietam | SPI | Omar Dewitt (44) | V |
| Anzio | AH (2nd or 4th ed) | Thomas Walsh (1427) | EP |
| Arab Israeli War | AH | Dennis Sheppard (804) | VE |
| Ardennes '44 | GMT | Rob Franz (2277) | VES |
| Ardennse Offensive | SPI | Hugh Smithers (2313) | VE |
| Assault on Cyprus | AH | Chris Hyland (1234) | VE |
| A Time for Trumpets | GMT | Jeff Miller (1303) | VE |
| Autumn for Barbarossa | MMP | John Trosky (1554) | VE |
| A Victory Lost | MMP | Ed O'Connor (1243) | VE |
| A World At War | GMT | Jeff Miller (1303) | VE |
| Bismarck | AH | James McCormack (2369) | VE FTF |
| Battle for Germany | SPI | Erica Snarski (1251) | VE |
| Battle for Jerusalem | SPI | Erica Snarski (1251) | VE |
| Battle of Austerlitz, Dec. 2, 1805 | SPI | Erica Snarski (1251) | VE |
| Battle of the Bulge | AH | Don Lazov (1981) | V |
| Bitter Woods | Compass/L2 | Hugh Smithers (2313) | VE |
| Bitter Woods | Compass | Randy Heller (1007) | FTF |
| Blitz | Compass | Jim Lauffenburger (2191) | VKE |
| Bloody 110 | COA | Aaron Kulkis (1983) | FVI |
| Blue Water Navy | Compass | James McCormack (2369) | VE FTF |

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| Borodino | SPI | Erica Snarski (1251) | VE |
| :---: | :---: | :---: | :---: |
| Caesar's Legions | AH | Stephen Genoff (2194) | VE |
| Cedar Mountain | SPI | Peter Hansen (2129) | V |
| Chickamauga | SPI | Omar Dewitt (44) | V |
| Cobra | SPI | Randy Heller (1007) | FTF |
| Downfall of Empires | Do-It Games | Erica Snarski (1251) | VE |
| Downfall of the Third Reich | Do-It Games | Erica Snarski (1251) | VE |
| Downfall: Conquest of the Third Reich, 1942-1945 | GMT | Steven Anderson (2139) | VE |
| Empire in Arms | AH | Edson Ramos (1989) | P |
| Empire of the Rising Sun | AH | Mike Scott (1555) |  |
| Falling Sky | GMT | Jim Lauffenburger (2191) | VKE |
| Fifth Frontier War | GDW | Dane Patterson (2010) | EV |
| Fire in the Sky (1999) | Phalanx | William Marcy (1761) | VTE |
| Flat Top | AH | Paul Koenig (1577) | V |
| Flying Colors | GMT | Thomas Ten Eyck (826) | E |
| Forgotten Legions | Compass | Erica Snarski (1251) | VE |
| Fury in the West | Battleline/AH | Erica Snarski (1251) | VE |
| Gallipoli | GMT | Ivan Kent (2133) | V |
| Gettysburg '65 | AH | Stephen Genoff (2194) | V |
| Great War In Europe | GMT | Donald Deacon (2241) | V |
| Great War in Europe Deluxe | GMT | Terry Gallion (2044) | V |
| Grenadier | SPI | Charles Sutherland (1804) | VE |
| Guns of August | AH | John Trosky (1554) | VE |
| Hitler's War | AH | Erica Snarski (1251) | VE |
| Hitler's War | AH | Jan Vanderveken (2286) | VE |
| Invasion of Malta, 1942 | AH | Chris Hyland (1234) | VK |
| Invasion of Russia, 1812 | Europa Simulazioni | Erica Snarski (1251) | VE |
| Island War | SPI | Erica Snarski (1251) | VE |
| Jerusalem | SDC | Erica Snarski (1251) | EP |
| Kadesh Command |  | Erica Snarski (1251) | VE |
| Knights of the Air | AH | Jeff Miller (1303) | VE |
| Korea | SPI | Erica Snarski (1251) | VE |
| Korean War | Compass | Paul Koenig (1577) | V |
| La Grande Armee | SPI | Charles Sutherland (1804) | VE |
| Lee vs. Grant | VG | Jeremy Rowley (1942) | V |
| Leipzig | SPI | Charles Sutherland (1804) | VE |
| Little Round Top | AH | John Trosky (1554) | VE |
| Lion of Ethiopia | Command/XTR | Erica Snarski (1251) | VE |


| Midway | AH | James McCormack (2369) | VEFTF |
| :---: | :---: | :---: | :---: |
| Midway | AH | Bruce Warren (2293) | FTF |
| Midway | AH | Mike Stubits (2311) | VE |
| Main Battle Tank 2ed | GMT | Martin Hogan (1704) |  |
| Monty's Gamble: Market Garden | MMP | Jerry Wong (1974) | FV |
| Napoleon at War Quad | SPI | Erica Snarski (1251) | VE |
| Napoleon at War Quad - Quatres Bras | SPI | Don Lazov (1981) | V |
| NATO: Cold War Goes Hot | Compass | Giovanni Faisca (2178) | VEL |
| No Retreat: North Afrika | GMT | Jerry Wong (1974) | FV |
| North Africa | MMP | John Trosky (1554) | VE |
| Pacific War | VG | Jeff Miller (1303) | VE |
| PanzerArmee Afrika | SPI/AH | Erica Snarski (1251) | VE |
| Panzer Battles | MMP | John Trosky (1554) | VES |
| Panzer Grenadier | AP | Carl Wolf (1992) | V |
| Panzer Leader | AH | Stephen Genoff (2194) | V |
| Panzer Leader | AH | Art Dohrman (1551) | VEF |
| Patton's Vanguard | Revolution | Bob Jones (1548) | VKL |
| Phalanx | SPI | Erica Snarski (1251) | VE |
| Proud Monster | XTR | Edson Ramos (1989) | P |
| Punic Wars | SPI | Erica Snarski (1251) | VE |
| Punic Wars | SPI | Mark Palmer (1074) | VE |
| Rebel Sabres | TSR | Peter Dunn (2235) | V |
| Rise and Decline of the Third Reich | AH | Bruce Warren (2293) | FTF |
| Roads to Leningrad | GMT | Andrew Cozzi (1998) | V |
| Rommel's War | Worthington | Bob Jones (1548) | V |
| Russian Campaign | Jedko Games | Peter Dunn (2235) | $V$ |
| Russian Front | AH | Martin Kerslake (2011) | V |
| Russian Front | AH | Jan Vanderveken (2286) | V |
| Sixth Fleet | SPI | James McCormack (2369) | VEFTF |
| South China Seas | CMP | Mike Ricotta (2004) | VKE |
| SPQR | GMT | Justo Perez (2009) | FV |
| Storm Over Jerusalem | MMP | Erica Snarski (1251) | V |
| Tank on Tank | LnL | Duncan Rice (1394) | V |
| Terrible Swift Sword | TSR | Peter Dunn (2235) | $V$ |
| The Longest Day | AH 2nd Ed. rules | Nacho Fernandez (1745) | VE |
| The Russian Campaign | 4th L2 or 5th edition GMT | John Ohlin (2346) | V |
| The Russian Campaign | AH | Bruce Warren (2293) | FTF |
| The Tide At Sunrise | MMP | Nick Rusch (1913) | U-E-L-K |


| This War Without An Enemy | Nuts! Publishing | Andrew Patience (1646) | V |
| :---: | :---: | :---: | :---: |
| Thunder at Cassino | AH | Jerry Wong (1974) | FV |
| Tobruk | AH | Dennis Sheppard (804) | VE |
| To The Green Fields Beyond | SPI | John Trosky (1554) | VBS |
| Turning Point: Stalingrad | AH | Jan Vanderveken (2286) | VE |
| Twilight Struggle | GMT | Jeff Miller (1303) | VE |
| Ukraine '43 | GMT 1st. Ed. Only | Rob Franz (2277) | VES |
| Von Manstein's Backhand Blow | GMT | Rob Franz (2277) | VES |
| Verdun 1916: Steel Inferno (2020) | FOS | William Marcy (1761) | VE |
| Wagram | SPI | Omar Dewitt (44) | V |
| War and Peace |  | Mike Kettman (1067) | V |
| War at Sea | AH | Bob Jones (1548) | V |
| War of the Suns | MMP | Jeff Miller (1303) | VE |
| War of 1812 | Columbia | Bob Jones (1548) | V |
| Winter War | SPI | Erica Snarski (1251) | VE |
| Wooden Ships and Iron Men | AH | Peter Dunn (2235) | VI |
| WWII | SPI | Erica Snarski (1251) | VE |
| WW2 Commander: Battle of the Bulge Compass |  | Bob Jones (1548) | V |

## New members list

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## How to access the current Open Match List online:

Once you get to the AHIKS website, hover over Want an Opponent? This will then reveal the People Wanting a Game option.

Click on the option which will open the People Wanting a Game page.

Open the hyperlink located within the first sentence that is highlighted in blue:
"This Google Spreadsheet lists, by game title,..."

# Workshop: RDF 



## $R D F$ : A retro-modern tactical view of the Gulf Strike combat system

After the bankruptcy of SPI in early 1982, Strategy © Tactics was left on hiatus for nearly a year while the dust settled. TSR acquired the remains and tried to make a go of it for the next 20 issues, with mixed success. The initial S\&T games published by TSR were pipeline designs, already practically completed under the stewardship of the now-departed SPI design and production team. The first of these arrived in S\&T \#91 with a Mark Herman design, Rapid Deployment Force, Global Cavalry for the 80's.
$R D F$ presents players with a number of modern war (in 1983) scenarios, based on conventional Orders war (in 1983) scenarios, based on conventional Orders
of Battle for two opposing forces. The main Cold War protagonists are represented as well as the nations of Iran, Iraq, and Syria. The counter mix provides each side with a battalion's worth of platoon elements side with a battalion's worth of platoon elements
supplemented by an interesting range of supporting assets.

Mike Dyer



In the case of the US Rapid Deployment Force, counters are included for the MPWS light tank and LAV squad carriers. At the time the game was produced these vehicle concepts were only under experimental use with the $9^{\text {th }}$ Infantry division, which served as the army's HTTB (High-Technology Test-Bed). The LAV did see service with the USMC from 1983 (the Piranha), but the vehicles were eventually dropped by the US Army due to a lack of congressional funding.

Instead of canned scenarios, the system provides a set of tables that are consulted to randomly generate the starting conditions for each game session. Entry and exit points, orders (victory conditions), starting formations, HQ leadership ratings; all are randomized using these tables. The scenario is then played out over an appropriate section of the, rather generic, map. The map is intended to be representative of the Zagros mountain-region of western Iran. The terrain is dominated by peaks and valleys; broken ground, scattered with villages and fields.

## While Mark Herman's Gulf Strike (Victory

 Games, 1983) is well known and highly regarded, it is interesting to discover that he also developed this modern tactical game which bears some familiar design concepts.

The tracked Mobile Protected Weapon System (75mm ARES cannon) and 8-wheeled Light Attack Vehicle (25mm Chain Gun). These vehicles were designed to be highly mobile; lightly armored but armed with weapon systems effective against heavier vehicles.


Within RDF we find presented those same concepts of unit formations (Move to Contact, Hasty or Deliberate Assault/Defense) that are such core elements of the Gulf Strike land combat system. In Gulf Strike, the formation status of a division or brigade sized counter is applied either as an offensive multiplier to the unit ratings or a defensive shift to the CRT columns for combat determination.

With $R D F$, the effects of "formation" are simulated by complex rules governing the movement and position of each platoon element under their respective company and battalion HQ's. Instead of affecting combat resolution, here the rules are designed to restrict the degree of frontage and friction that the battalion is able present to an enemy force.

For example, "Move to Contact" formation stipulates that the different company HQ's must be spaced no less than seven hexes apart and each platoon element must remain within three hexes of its company HQ. The battalion as a whole will have a predetermined axis of advance identified (start and end hexes) and all elements of the battalion must remain within three hexes of a road network joining those two points.

Under a "Deliberate Defense" formation, the company HQ's may overlap their frontage, and elements can be up to eight hexes from their respective HQ. Now the battalion elements may be spread out and deploy up to 15 hexes away from the axis of advance.

In play, one finds these cumbersome rules to be quite effective at limiting a formation's ability
to function. It's an interesting insight into how formations are condensed to the die roll modifiers and odds column shifts for combat at the operational level. Given the overlap in design, one could conceivably use $R D F$ as a tactical system for conducting the detailed resolution of Gulf Strike battles.

The Sequence of Play is along the lines of your basic move/fire system, but also introduces some interactive reaction mechanics for units held back in an Active status for this purpose. Active units are able to conduct Hasty Fire during movement, and react with Opportunity Fire to enemy movement or fire. Such Op Fire may itself trigger still Active enemy units to respond with Reaction Fire, and so forth. In practice, I've tended to use the reactive combat system more on the exception than the rule, but it can lead to a nicely chaotic battlefield events that reward careful tactical planning.

Being a great fan of Gulf Strike I was pleased to discover $R D F$ to be a rather interesting artifact, deserving of some time on my solo gaming table. Rather than use the generic situation builder I decided to adapt a couple of old scenarios to put the system through its paces.

These two RDF scenarios have been tailored with special rules in order to experiment with the different elements provided by the game.

To that end I have included some custom printerfriendly maps which should print at the correct scale for the RDF counters if using standard US Letter paper, or with no image reduction on A 4 size.

## SCENARIO \#1:THE KILL ZONE

The concept of kill zones have been a staple of NATO defensive planning since the earliest days of the Cold War but the basic tactics are much older. Select a natural defile through which an enemy must pass, tempt them into it, and then attack from flanks and rear. For this scenario the RDF force have selected a river valley three kilometers across and four kilometers deep to trap and destroy a Soviet reinforced motorized infantry battalion.

The Soviets begin in Move to Contact formation and their tactics will be restricted accordingly by game system's formation rules. With little room to maneuver in the narrow valley the Soviet commander must quickly switch into Hasty, or Deliberate Assault formation in order to win through or watch his companies be destroyed in piecemeal fashion. The RDF remain in Deliberate Defense formation throughout the scenario and I have included a number of experimental options for for solo play.

## RDF Game Parameters

## Situation:

USSR vs RDF (1985)
RDF Sets up First; USSR Moves First

## Start Formation:

RDF: Deliberate Defense
USSR: Move to Contact

## Battalion HQ Rating:

RDF: 2; USSR: 3

## Entry/Exit:

RDF: Enter and Exit South edge
USSR: Enter North edge, Exit South edge on paved road.

Victory Conditions:
RDF: Destroy ( 2 companies and 2 Bn assets)
USSR: Exit (2 companies and 2 Bn assets)

## RDF Battle Group

The RDF forces are set up first. They may be deployed on any hex at least four hexes away from the Soviet (north) map edge. Guidelines on the principles of establishing a kill zone defense follow:

## Siting the anti-tank weapons

The anti-tank weapons (TOW) must be sited first so as to have clear fields of fire into the flanks and rear of vehicles in the killing zone. Once these weapons have been sited, the units with shorter range weapons can be set up in positions where they can support them with defensive fire.

## Covering obstacles with fire

On their own, obstacles such as rivers, roadblocks and villages will merely delay the enemy until he


The map shows the game position at the end of Soviet turn one. The Soviets have discovered the main bridge is out and have taken the secondary road to parallel the axis of advance. US RDF troops have set up their roadblocks and sited heavy weapons to ambush and destroy the leading elements of the Soviet force.

The USSR has the greater numbers but limited space in which to operate. The Soviet commander will need to change formation if he hopes to divert reinforcements down the west bank in a flanking maneuver. A piecemeal series of attacks with no attempt to engage in any subtlety is likely to see a large number of troops destroyed or routed.

Will the kill zone hold firm or will it break?
finds a way around or through them. Covering these obstacles with correctly sited weapons can turn them into impassable barriers.

## A mobile reserve

In the confusion of an attack some enemy units are bound to penetrate the defense. A well-placed reserve should be available for counter-attack to maintain the integrity of the defense. An RDF tank company has been held back for this role. They will arrive as a reinforcement rather than being used on the main defensive position, where their mobility is wasted.

## RDF Infantry Company

$1 \times$ Battalion HQ
$3 \times$ M-113 APC, $3 \times$ Infantry
RDF Support Assets
3 x TOW Anti-Tank Guns
$1 \times$ M-125 Light SP Art
1 x Commando Recon
$1 \times \mathrm{M}-113$ APC, $1 \times$ Engineer
$1 \times$ M-109 Medium SP Art (optional)
1 x Airstrike/turn starting Turn 4 (optional)
RDF Armor Company (Turn 4, full move)
$3 \times$ M-60 Medium Tanks

## Special Ambush Rules

For this scenario RDF troops are considered to be hidden from enemy LOS until they either move or fire. They are revealed immediately if an enemy unit moves into an adjacent hex.

## Options for the RDF force

The RDF can use any or all of the following options to vary the difficulty of the scenario:

## Engineering

$6 \times$ Craters to block road or village hexes. Roads revert to underlying terrain, villages convert to broken terrain for movement purposes.

1 x Bridge Demolition. The bridge can be removed either at start of game, or at start of any US movement phase. Any troops present on the bridge at the time of demolition are eliminated.

All RDF units begin dug-in, with NO ACT
markers. (see rule 9.62 for Deliberate Defense).
A trail is cleared to allow the armored reserve access to a nearby hillcrest overlooking the battlefield. This is already marked on the map.

## Artillery

One platoon of M-109 155mm SP Artillery is on call. The unit is deployed in an abandoned quarry on the south edge of the map (this area is already marked on the map).

The RDF may call one Airstrike per turn. This air support is not available until Turn 4.

## Soviet Reinforced Motorized Battalion

Soviet troops enter from the north edge of the map in accordance with the following schedule:

## TURN 1

## Recce Patrol: (half move)

$1 \times$ BTR-40 Recon
Lead Elements: (half move)
1 x BMP, $1 \times$ Infantry
$1 \times$ T-55 Medium Tank
1 x BTR-50 Light SP Art
TURN 2
Advance Guard: (full move)
2 x BMP, $2 \times$ Infantry
$2 \times$ T-55 Medium Tanks
$2 \times$ D-30 Medium Art
$1 \times$ ZSU-23/4 SP AA
TURN 3 or TURN 4
Main Force: (T3 half move, or T4 full move)
$1 \times \mathrm{Bn} \mathrm{HQ}$
3 x BMP, 3 x Infantry
$1 \times \mathrm{D}-30$ Medium Art
On turn 3, the Battalion HQ and first half of the Soviet main force may enter with Half Move along the main paved road only; or delay entry to Turn 4.

Starting on turn 3, the Battalion HQ may attempt formation change during the First Player Command Phase regardless of whether the HQ has entered the map in the preceding Movement Phase.

## TURN 4 or TURN 5

Main Force: (T4 half move, or T5 full move)
$3 \times$ BMP, $3 \times$ Infantry
$3 \times$ T-72 Heavy Tanks
$1 \times$ SA-9 Mobile AA
$2 \times$ BM-21 Heavy SP Art
$1 \times$ PT-76 Recon
On turn 4, the Battalion HQ and first half of the Soviet main force must enter with Full Move if not already on the map. They may enter from any northern edge hex, but cannot enter from west of the river unless the battalion is in an Assault formation.

On turn 4, the second half of the main force and all remaining battalion assets may enter with Half Move along the main paved road only, or delay entry to Turn 5.

On turn 5, the second half of the main force and all remaining battalion assets must enter with Full Move if not already on the map. They may enter from any northern edge hex, but cannot enter from west of the river unless the battalion is in an Assault formation.

## Special Soviet Rules

The Soviets enter in Move to Contact mode and must adhere to all the restrictions for that formation

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except as noted below.
The Soviet units must follow the axis of advance along the main road as far as possible or until first contact is made with the enemy. If the RDF destroy the first bridge before or during the scenario, then the Soviets may divert to use the secondary road as an alternate axis of advance.

Lead tank and infantry platoons that enter on the first turn are not company HQ's. They can be treated as battalion assets but may not leave the road unless they can move within command range of their Company HQ, which enters on Turn 2.

Given the limited map space in this scenario, the tank companies are permitted to overlap frontage with the infantry companies regardless of the Battalion HQ formation.

The Soviets may not attempt formation change until the Battalion HQ is scheduled to arrive on Turn 3 , regardless of whether it is already on the map.

> The map for Scenario \#1 is on the next page, followed by Scenario \#2 and its map.
> -- Luiz Cláudio

## Submissions

We invite you to submit content for publication.
Text files must be submitted in editable formats, such as DOCX, RTF, TXT, MD, HTML. Do not send in PDF, PUB, and the like. All image files must be submitted separately, either in JPG or in PNG formats.

Articles will be accepted at any time, though submission of an article does not guarantee its publication. News items will be accepted if received in sufficient time to allow production schedules to be met. Regular deadlines are on the 20th of each odd-numbered month.

Please send your submission files to editor@ahiks.com.

Submissions for the next issue (vol. 59, n. 3) must be received by May 20th, 2024.


## SCENARIO \#2: AIRBORNE ASSAULT

This scenario explores the ability of the RDF to deliver troops into the battlefield by helicopter. While this is not really accommodated within the game system, the RDF did have the capability to deploy the 82nd airborne in this way. I have added some simple rules to allow the possibility.

The situation begins with the RDF airborne assaulting Syrian troops that are dug-in around a small village and hill in a forward position overlooking the border zone. A battalion of Soviet reserves are deployed nearby and will be brought in quickly to counter-attack the point of assault. The RDF must deploy their airborne forces in an attempt to capture the Syrian position. On Turn 3 a battle group of the 24th Mechanized Infantry arrives to consolidate the field and engage the Soviet reserve. These US RDF troops are equipped with experimental LAV personnel carriers and MPWS light tanks.

Both sides are supported by helicopter gunships. The US should use their Apache gunships to eliminate the Syrian anti-air defenses before the transport helicopters arrive. The Soviet Hinds should have a chance to bombard the assault troops with heavy rockets before they can organize.

## RDF Game Parameters

## Situation:

RDF vs Syria/USSR (1986)
Syria Sets up First; RDF Moves First

## Start Formations:

RDF: 82 ${ }^{\text {nd }}$ Airborne - Hasty Assault
$9^{\text {th }}$ Infantry - Move to Contact
Syria: Deliberate Defense
USSR: Move to Contact

## Battalion HQRating:

Both sides roll for HQ Rating on table [3.23]
Both sides may attempt to change formations from Turn 1.

Entry/Exit:
RDF: Enter West edge
USSR: Enter East edge
Victory Conditions:
RDF: Destroy ( 3 companies and 5 Bn assets)
USSR: Destroy (2 companies and 3 Bn assets)

## Syrian Defense Force

## 3 x Infantry

1 x Scorpion Light Tank
1 x ZSU-23/4 SP AA
1 x Rapier SP AA
The Syrian troops are setup in Deliberate Defense
 the movement phase on US turn one. Apache gunships are attempting to neutralize Syrian anti-air defenses before the transports arrive to drop infantry at a landing zone to the north of the central village.

The RDF must take the village and billtop quickly if they hope to establish a defensive position before the main Soviet reserves arrives. Hind attack helicopters will arrive almost immediately to challenge the landings and US air superiority.

If the Soviet command turns out to be capable, they may be able to rapidly change formation such that the US troops are enveloped from multiple directions.
formation at the start of the game and can be deployed "dug-in" in any village or hilltop hex.

RDF 82 ${ }^{\text {nd }}$ Airborne

## TURN 1

$3 x$ Infantry (airborne)
$3 \times \mathrm{AH}-1 \mathrm{~S}$ Helicopters (full move)
$1 \times$ Commando Recon (half-move)
2 x TOW Anti-Tank Guns (half-move)
$1 \times \mathrm{AH}-10$ Airstrike (every turn, from turn 1)

## Airborne Landing Rules

At the start of the US Movement Phase, designate the landing zones using Air Strike markers on any clear hex(es) at ground level. There must be no enemy units in or adjacent to the landing zone and all three units must land within one hex of each other.

The Apache helicopters (only) may enter first and attempt to clear anti-aircraft batteries before the air transports (UH-60 Black Hawks) arrive at the designated landing zones. The transport helos will take fire from any Syrian anti-air capability that has not already fired in the US movement phase. This Anti-Air fire is resolved as for Air Strikes (with no helo agility or height modifiers). A transported unit will take 'two hits' for each successful anti-air result against it. Units land in Inactive status and no further movement is allowed. These transport helos have no combat capability and are assumed to leave immediately after drop-off.

The Commando and TOW units also enter on Turn 1 using half-move (inactive). These ground assets may all arrive via the road bridge or through the snorkel point where the track fords the river, but not both.

## RDF 9 ${ }^{\text {th }}$ Infantry Battle Group

TURN 3 (full move)
$1 \times \mathrm{Bn} \mathrm{HQ}$
$3 \times$ LAV, $3 \times$ Infantry
$3 \times$ MPWS
$2 \times \mathrm{M}-125$ Light SP Art
$2 \times$ M-109 Medium SP Art
$1 \times$ Chaparral SP AA
The RDF troops arrive on Turn 3 using fullmove via the road bridge. If the US is in an Assault
formation, then any one of the companies may use the ford crossing.

Reinforced Soviet Motorized Battalion
TURN 1 (full move)
$2 \times$ Hind Gunships
TURN 2 (full move)
3 x BMP, 3 x Infantry, $1 \times$ D-30 Medium Art
This company may enter along any road on the east edge of the map.

TURN 3 (full move)

$$
\begin{aligned}
& 1 \times \text { Bn HQ } \\
& 3 \times \text { BMP, } 3 \times \text { Infantry, } 1 \times \text { D- } 30 \text { Medium Art } \\
& 3 \times \text { BMP, } 3 \times \text { Infantry, } 1 \times \text { D-30 Medium Art } \\
& 3 \times \text { T- } 72 \text { Heavy Tanks } \\
& 2 \times \text { BM- } 21 \text { Heavy SP Art } \\
& 1 \text { z ZSU } 23 / 4 \text { SP AA } \\
& 1 \times \text { SA- } 9 \text { Mobile AA }
\end{aligned}
$$

All three companies must arrive on different roads depending on the Battalion formation. If the Soviet formation is Hasty Defense, then they must use the same entry road on the east edge as the earlier company, and also the two roads nearest to that axis. In Deliberate Defense formation the three companies may arrive along any of the five roads on the north, south or east edges. Should the Soviets still be in Move to Contact formation, then only one company may arrive along the entry road per turn, until the Battalion formation changes. Battalion assets may enter with any company.


Randy Heller



The first round of the AHIKS The Russian Campaign 500 Tournament has concluded. There were five Soviet wins, one Axis win, one default, and one forfeiture. I attribute the win/loss disparity to unfamiliarity with the scenario and perhaps a few tyros in the mix, which will fall by the wayside in the opening rounds. I am convinced the six turn tournament scenario we designed and developed is about as evenly balanced as possible.

As the GM for this event, I naturally receive some random commentary and focused complaints from the competitors. The most common concerns a tardy opponent who disappears weeks at a time. Two months playing time was granted per round. I think that is very generous, and I find it difficult to sympathize with those who try to play catch-up the last week before the deadline. "It is what it is" as they say. Get'er done!

I would like to take this opportunity to personally thank Robert Holifield, a competitor in this event, who has been making a monthly financial contribution to offset the cost of the tournament. As I have pointed out to those who sat on the fence and ultimately decided against joining in, some lucky and talented gamer is going to walk away with $\$ 500$ cash in pocket.

Below is the schedule for round two, which ends Monday May 6 2024. Stay tuned.

## AHIKS TRC 500 Tournament Second Round Pairings

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# Hidden searching without a referee in Guadalcanal '92 and Midway '91 

Scott Romanowski

One key feature of games like Guadalcanal_and Midway is searching for the enemy, and ideally finding their units before they find your units. The current system for face-to-face play in Guadalcanal_and Midway leaks information to your opponent: at some point, you have to tell your opponent which hexes you are searching. One solution is to use a referee, whether a human or a computer program, but you may not have access to either. This article describes a system that does not require a human referee or computer during play. It involves using aliases for each hex when searching. That is, your opponent would record the aliases for the hexes his units are in, and you'd search with the aliases. Each player knows only the aliases for the hexes their units are in and the hexes they're searching. Since the aliases are assigned randomly, change from turn-to-turn, and players aren't given an opportunity to work backwards from alias to hex, knowing an alias tells you nothing about the hex it represents.

To show the difference this makes, imagine you have a unit in hex D6. Your opponent searches C4, C5, and C6. You know your opponent is getting close to finding you, and perhaps C6 is the limit of his search ability. You may want to move into C6 next turn under the assumption that he won't search the same hex twice in a row. On the other hand, with aliases, D6 might have the alias "Tom". Your opponent searches "Fred", "Able", and "X-Ray". The aliases do not tell you anything about the actual hexes searched.

The aliases are randomly-generated and change from turn to turn, so information about previous turns' aliases is worthless: if your opponent searches "Tom" next turn, it does not mean she searched hex D6. ${ }^{1}$

My previous article on this topic was generic, leaving it up to the players to determine how to implement it in specific games. This document is specifically tailored to The Avalon Hill Game Company's 1992 game Guadalcanal and 1991 game Midway and shows how to amend the Action Phase to use this system. This system uses two different types of

[^0]Alias Sets. ${ }^{2}$ The first type is a Location Alias Set, which lists all the hexes (e.g., A1, B2) and their aliases. These are used in Steps 2 b 1.3 and 2 b 1.4 of the turn. The second type is a Transition Alias Set and it is used only if Optional Rule 16 Surface Combats is being used. Its use is similar to the other types and fully detailed in its own section below.

There is a URL at the end of the article where you can download pregenerated Alias Sets to start using this system immediately. All you have to do is print them. This article includes sample Alias Sets to use in examples; you will need more for play.

## Searching with Aliases Procedure

The players will use two different Location Alias Sets during each turn, one for each player. They are called the Side A Alias Set and the Side B Alias Set. ${ }^{3}$ The process of using the various section of an Alias Set is described in the "What is an Alias Set" section.

Amend the Turn rules as follows:

1. At the end of 2b1.3 The Sea Movement Step, after moving all task force markers:
a. Side B records each task force's hex and using the Non-Searching Player Section of the Side B Alias Set, records each hex's alias.
b. Side A records each task force's hex and using the Non-Searching Player Section of the Side A Alias Set, records each hex's alias.
c. Players exchange Alias Sets, since they will be using the other set as they search.
2. During 2b1.4 and 3d The Air Movement and Search Step:
a. As Side B moves its air units, Side B finds the alias for each hex on the Searching Player
[^1]Section of the Side A Alias Set. Instead of announcing the hex identification (3d3.1), Side B announces the alias. Side A looks at the aliases he recorded at the end of 2 b 1.3 . If an alias matches, then the hexes match. The appropriate task force is "spotted" per 3d3.2.
b. As Side A moves its air units, Side A finds the alias for each hex on Searching Player Section of the Side B Alias Set and uses the same process as Side B did.
3. During 3d5 Sea Search:
a. Side B uses the Searching Player Section of the Side A Alias Set to find the aliases for all its task force markers and announces the aliases, using the same process as for Air Search.
b. Side A does not need to search since if both players had task forces in the same hex, Side B's Sea Searches would have discovered that.

Once a task force is spotted because an alias matches, both players know which hex the alias corresponds to; that secret has been revealed. Since the other player gains no information from failed searches, both players are required to call out the aliases for any and all hexes they have ships in.

When unit's locations are known to both players, then there is no need to use aliases. There is no need to use an alias for the location of the American base in hex M5 in Midway. Similarly, when "shadowing" (12d2), there is no need to aliases. Both sides know which units are in which hex, and the "shadowing" scout air unit moves with the task force. However, if there are multiple task forces in the hex, and some are not shadowed, then those not shadowed use the alias system as usual.

## What is an Alias Set?

An Alias Set is a complete list of all 220 hex IDs and their aliases. Each set is numbered, so the players can ensure they're using the same set. Each set consists of two sections, the Searching Player Section and the Non-Searching Player Section. The Searching Player is the person who will be calling out aliases being searched; the Non-Searching Player is the person who compares what the Searching Player says to a written list of aliases and zones containing ships.

The Searching Player Section is a list of hex IDs and their aliases. The Non-Searching Player Section is
two lists. The first list is of hex IDs and intermediates. The second list is of intermediates and aliases. When using the Non-Searching Player Section to record aliases, first look up and record all the hex IDs and their intermediates, then look up and record all the aliases for the intermediates.

The reason for the intermediates is to prevent unintentional information leakage. If looking up an item from a list of hexes and aliases, a person might notice the aliases of hexes near the hex in question. Later, if the person learns the other player is searching one of those aliases, the person would know where the search is, even though that information should not be learned. The intermediate lists are constructed so that if hexes are close together in the hex list, their intermediates are far apart in the intermediates list. The Non-Searching Player uses this process with intermediates because that person hears the alias for every hex the Searching Player searches. The Searching Player may notice aliases for hexes near those being searched, but because the Non-Searching Player never says any aliases, that information is useless.

An Alias Set has a number of dummy locations that players can use to disguise the actual number of searches they are conducting. Each dummy location has its own aliases, and thus cannot match the alias for an actual hex.

## Example

An example will make things clear. Please refer to the sample Alias Sets below.

Example: it is turn 8 of Scenario One of Midway. The player commanding the Japanese force is Side B; the player commanding the U.S. force is Side A. For this turn, the Side A Alias Set is \#17, and the Side B Alias Set is \#24.

After 2b1.3 The Sea Movement Step for Side B, the Japanese Mobile Force is in hex J2. Side B looks at the Non-Searching Player Section of Alias Set \#24 and finds "J2" in the Location to intermediates list - J2-31an. ${ }^{4}$

Side B has no other task forces, so he finds "26ri" in the intermediate to aliases list - 31an-hr. He records Mobile Force - hex J2 - 31an — alias hr. ${ }^{5}$

[^2]After 2b1.3 The Sea Movement Step for Side A, the U.S. Task Force 16 is in L1 and TF 17 is in L2. Side A looks at the Non-Searching Player Section of Alias Set \#17 and finds "L1" and "L2" in the Location to intermediates list - L1-96at and L2-13wq.

Side A bas no other task forces, so she finds "96at" and " $13 w q$ " in the intermediate to aliases list - 96at-bf and $13 w q-L s$. She records
TF16 - bex L1 - 96at - alias bf
TF17 - bex L2 - 13wq - alias Ls
During $2 b 1.4$ the Japanese player, Side B, moves Scout unit A from hex J2. As it moves, he uses the Searching Player Section of Alias Set \#17 (the Side A set) to find the alias of each hex it moves into. Scout $M$ starts in J2 (nr), moves into J3 (alias Lr ${ }^{6}$ ), J4 (alias aq), J5 (alias dq), K5 (alias dr), L4 (alias qx), and L3 (alias kL). He calls out the aliases, not the hex IDs, as he searches, " $n r$ ", "Lr", " $a q$ ", "dq", " $d r$ ", " $q x$ ", " $k L$ ". The U.S. player compares the aliases to those of her task forces, "bf" and "Ls", as Side $B$ calls out each one and each time replies "Nothing there". She cannot realize how close Side B came to finding TF17 in L2.

Side A then performs step 2b1.4. She first moves Scout A from hex L1, using the Searching Player Section of Alias Set \#24 (the Side B set) to find the aliases of the hexes as she moves. She moves it to hex L1 (bp) and calls out "bp". "Nothing there". K2 (alias kt) and calls out " $k t$ ". "Nothing there". She moves to J1 (alias en): "en", "Nothing there". She moves to I2 (alias bx): "bx", "Nothing there". She next moves it to hex J2 (alias hr) and calls out "br". Side B sees that this matches the alias for hex J2 and tells her she has spotted a task force, with all that entails. Both sides know that this happened in bex J2.

At the end of searching, 3d5 Sea Searches, both sides search with their task forces. Side B uses the Searching Player Section of the Side A Alias Set, \#17, to find hex J2 is alias $n r$.

Side B conducts his Sea Search by calling out " $n r$ ". Side A compares that alias to the aliases for her task forces' bexes she recorded using the Side A Alias Set. " $n r$ " does not match either "bf" or "Ls".

Side $A$ does not have to search with her task forces because if they are in the same hex as any of Side B's task forces, they would have been found when he searched with his task forces. She completes her Sea Search by calling out "bex M5", the base at Midway. Side B does not have a task force in hex $M 5$.

[^3]Note that the hex alias of a task force that launched an Air Search was called out during the Air Search step so there is really no need to call out the alias again in the Sea Search step.

While all this switching of Non-Searching and Searching Player Sections, and two Alias Sets seems confusing, it is simple as the following table and summary show:

|  | 2b1.3 Record Task Force hex alias |
| :--- | :--- |
| Side A | Use Non-Searching Player Section of Side $A$ <br> Alias Set |
| Side B | Use Non-Searching Player Section of Side B <br> Alias Set |


|  | 2b1.4 Air Searches, <br> find alias for each hex entered, <br> and 3d5 Sea Search, <br> find alias for each task force's hex |
| :--- | :--- |
| Side A | Use Searching Player Section of Side B Alias <br> Set, comparing to Side B's recorded task force <br> hex aliases |
| Side B | Use Searching Player Section of Side A Alias <br> Set, comparing to Side A's recorded task force <br> hex aliases |

## What if opposing task forces switch hexes?

The game rules do not allow the detection of opposing task forces that switch hexes. That is, if an American task force moves from M8 to M7 while a Japanese task force moves from M7 to M8 on the same turn. This is an optional expansion to the rules, allowing detection in situations not possible using the standard rules.

This type of search would occur just before searching with the final locations of task forces in step 3d5 Sea Search. The system supports that detection by using a special type of Alias Set called a Transition Alias Set. A Transition Alias Set has a special property: a move from one hex to another has the same alias as the reverse move, e.g., "M8 to M7" has the same alias as "M7 to M8". A Transition Alias Set listing every possible transition would prevent any information leaks, like the other Alias Sets in this system, but would be six pages long. Instead of such a complete list of all transitions, a "short form" is used. Imagine coloring each hex, using over 100 different colors, many hexes may have the same color, but you have
arranged the colors so while there are many blue hexes and many red hexes, there is only one instance where a blue hex is adjacent to a red hex. All the transitions are unique pairs. But here, instead of colors, aliases are used.

When using such a short form Transition Alias Set, record the aliases for both the starting and ending hex for each move. To make a dummy move to hide the actual number of moves you are making, use one of the dummy aliases as one of the two hexes. Those are unique aliases and will not match any of the other hexes. When searching, if both aliases match regardless of order, then the moves are the same.

There is no need for both players to search to see if they made matching, reciprocal moves. If they did, one player's search will discover that. For detecting reciprocal moves, Side B is the Non-Searching Player and Side A is the Searching Player.

Example: The players are using Transition Alias Set \#31 this turn. Side B moves a task force from M7 to M8, and another from N6 to N7. Using the Non-Searching Player sections of Transition Alias Set \#31, he looks up the intermediates for those four hexes and records:

M7-M8 intermediates 70co-96pt
N6-N7 intermediates 96pn-17xe
He then looks up the intermediates to aliases and records

M7-M8 intermediates 70co-96pt alias $0 c-7 g$ N6-N7 intermediates $97 p n-17 x e$ alias $4 p-3 v$.

Side A moves a task force from Q8 to Q9, and another from M8 to M7. Using the Searching Player section of Transition Alias Set \#31, she looks up the aliases for Q8, Q9, M8 and M7 and records

Q8-Q9 alias 8j-3v. M8-M7 alias 7g-Oc.

She calls out " $8 j-3 v$ " and there is no match. Notice that Side $B$ realizes that part of this transition alias pair, 3 v , matches the alias of hex $N 7$, but because of the nature of a Transition Alias Set, several hexes bave the alias 3 v . Side A might have moved from bex N7 or not; there is no way of knowing other than searching the aliases, and Side $B$ is not given the opportunity.

When Side A call out " 7 g -Oc", Side B reveals he had a task force that moved from $M 7$ to M8, and they will resolve Surface Combat as their forces meet at the M7-M8 hexside if using that optional rule. If not using Surface Combats, the TFs merely detect each other as they pass.

The short form Transition Alias List could leak information under very specific conditions. In the example above, if the Side B player were also moving a ship from Q 7 to Q 8 , and Q 9 to Q 10 , those aliases would be Q7 to Q8 "7i to 8j", and Q9 to Q10 " 3 v to 2 L ". When the Side A player calls out " $8 \mathrm{j}-3 \mathrm{v}$ ", the Side A player could realize that both those aliases correspond to hexes he knows and those hexes are adjacent, then the Side A transition would leak. I consider this risk of leakage small enough to justify not using the much longer Alias Sets of the full transitions.

## Alias Sets Needed

For each of the turns in the game you will need

- If using this system to detect when TFs swap hexes, whether or not you use Surface Combats, one Transition Alias Set
- Two Location Alias Sets

The longest scenarios in the Battle Manual are 20 turns for Guadalcanal and 23 for Midway, for at most forty-six Location Alias Sets, and twenty-three Transition Alias Set. I created 100 of each Alias Set, in PDF format ready to print, and they are these files in the zip file at https://bit.ly/3oKW5c8:
Gualalcanal92_Hexes_Sets_001-100.pdf
Gualalcanal92_Moves_Sets_001-100.pdf
Midway91_Hexes_Sets_001-100.pdf
Midway91_Moves_Sets_001-100.pdf
Ideally you would never re-use Alias Sets, but generate new, random Alias Sets for each game. You don't want to have your game ruined because you searched with a task force and your opponent happened to remember that hex and alias on that Alias Set, giving him the location of that task force without you knowing what you gave away.

You want to have many Alias Sets, never reusing one in a game, and so many that you won't remember details from one game to the next. Given that a full game is 23 turns, which will require 46 Alias Sets (and optionally 23 Transition Alias Sets), 100 of each type of Alias Set should be enough to prevent familiarity. Pick which Alias Sets you use randomly, so you aren't using the same ones for the same turns from game to game, and never reuse an Alias Set in the same game. But the ideal is to use each Alias Set once.

To create your own Alias Sets you will need to run a Python program and data files for hexes and transitions. All are available from the author.

Midway 1991 Location Alias Set 17 -- Non-Searching Player Section

Locations to intermediates

| A1 - | D7 - | H2 - | R8 - | dummy - |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| D6 | H1 | K7 | 02 | R7 | dummy | dummy |


| A1-05ng | D7-67tb | H2-35xg | K8-08jj | 03-74jn | R8-13sy | dummy-61iu |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| A2-21xh | D8-98av | H3-61rq | K9-21kv | 04-97hg | R9-37re | dummy-79fo |
| A3-52xa | D9-15jw | H4-82ds | K10-50nm | 05-21jh | R10-56go | dummy-06np |
| A4-75bi | D10-37cz | H5-09tv | K11-79bb | 06-38qj | R11-91Lc | dummy-25fd |
| A5-92zs | D11-56xe | H6-24Le | L1-96at | 07-64dc | S1-07rr | dummy-46po |
| A6-13at | E1-84yd | H7-44ae | L2-13wg | 08-87ri | S2-22ix | dummy-77ba |
| A7-38qz | E2-05qm | H8-69jw | L3-36qr | 09-00ej | S3-48eu | dummy-910r |
| A8-62mx | E3-24Lh | H9-97ju | L4-58hd | 010-31zu | S4-72ki | dummy-19md |
| A9-88xt | E4-47xr | H10-12uj | L5-84jy | 011-42kw | S5-99vf | dummy-37en |
| A10-06wd | E5-72vc | H11-33mv | L6-10tz | P1-74kr | S6-15yz | dummy-62wf |
| A11-29db | E6-99eb | I1-57nd | L7-22yg | P2-96gb | S7-41vu | dummy-83ef |
| B1-50dm | E7-16ix | I2-85ez | L8-42hz | P3-20mk | S8-62La | dummy-08wb |
| B2-68qi | E8-37ca | I3-00ty | L9-77zh | P4-40ui | S9-89nd | dummy-24me |
| B3-93xn | E9-58zx | I4-32ee | L10-97va | P5-61eb | S10-09bg | dummy-49mz |
| B4-14ba | E10-82vy | I5-43jz | L11-11tq | P6-84fa | S11-29in | dummy-70mi |
| B5-33ce | E11-09ma | I6-65hm | M1-36ng | P7-07fh | T1-49bs | dummy-99uo |
| B6-59rq | F1-25ic | I7-92up | M2-60jn | P8-30cu | T2-72tL | dummy-12yt |
| B7-90mk | F2-50os | I8-18kr | M3-83vk | P9-50tr | T3-93gi | dummy-42fn |
| B8-06nb | F3-74yz | I9-36dq | M4-04ae | P10-75es | T4-12Lp | dummy-60qf |
| B9-23gc | F4-94hi | I10-60va | M5-29id | P11-91sd | T5-42ap | dummy-82uw |
| B10-54im | F5-17pg | 111-90nr | M6-46jn | Q1-17uv | T6-64vd | dummy-05hd |
| B11-67pg | F6-39wi | J1-110m | M7-69vb | Q2-39na | T7-89zf | dummy-31rg |
| C1-93ik | F7-64fk | J2-26ri | M8-97zg | Q3-63bm | T8-10xL | dummy-44zk |
| C2-18wy | F8-79zb | J3-49ds | M9-16ry | Q4-90wg | T9-24gf | dummy-74ba |
| C3-34zt | F9-02sg | J4-70zg | M10-39mp | Q5-04nh | T10-46bt | dummy-93dc |
| C4-64ya | F10-30nv | J5-99af | M11-56nw | Q6-32kk | T11-66ur | dummy-17vy |
| C5-82uc | F11-50aq | J6-12iy | N1-85gq | Q7-46rs | dummy-98rr | dummy-34Lo |
| C6-07sg | G1-71he | J7-37fw | N2-09bh | Q8-71Lz | dummy-13mr | dummy-61xm |
| C7-26aj | G2-94pk | J8-64ot | N3-28Lr | Q9-95ez | dummy-38wq | dummy-90ct |
| c8-47wh | G3-14qq | J9-86Lp | N4-46rb | Q10-14hc | dummy-56fn | dummy-02qg |
| C9-75dh | G4-41rk | J10-04ir | N5-75ea | Q11-41nh | dummy-86kp | dummy-22ft |
| C10-92mv | G5-63vs | J11-24uj | N6-98na | R1-58am | dummy-06tc | dummy-5200 |


| C11-15vx | G6-82ni | K1-49ec | N7-17tw | R2-84ch | dummy-29pb | dummy-69zz |
| ---: | ---: | ---: | ---: | :--- | :--- | :--- |
| D1-41rn | G7-11so | K2-75sw | N8-35LW | R3-03tz | dummy-54sa | dummy-93tg |
| D2-58hi | G8-27kr | K3-94yf | N9-59jf | R4-32zb | dummy-72xz | dummy-12zz |
| D3-86va | G9-48fv | K4-18wq | N10-84sn | R5-45Lc | dummy-92oj | dummy-38xo |
| D4-03mh | G10-71tg | K5-41qt | N11-01yi | R6-73cL | dummy-20bh | dummy-61tk |
| D5-28wb | G11-98zc | K6-55dr | $01-28 u a$ | R7-96tz | dummy-39vv | dummy-86fs |
| D6-45oa | H1-15ur | K7-80ky | $02-51 g x$ |  |  |  |

Midway 1991 Location Alias Set 17-- Non-Searching Player Section

Intermediates to aliases

| $00 e j-$ | $13 w g-$ | $28 w b-$ | $58 a m-$ | $72 t L-$ | $88 x t-$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $13 s y$ | $28 u a$ | $41 r n$ | $57 n d$ | $72 k i$ | $87 r i$ |


| 00ej-ir | 13wg-Ls | 28wb-jL | 41vu-fz | 58am-mq | 72tL-do | $88 \times t-L u$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 00ty-hr | 14ba-io | 29 db -df | 42ap-iq | 58hd-gx | 72vc-cn | 89nd-ag |
| 01yi-fk | 14hc-ep | 29id-av | 42fn-gw | 58hi-ac | 72xz-mw | 89zf-bh |
| 02qg-jv | 14qq-bc | 29in-nv | 42hz-ev | 58zx-kv | 73cL-Lm | 90ct-gt |
| 02sg-hw | 15jw-bd | 29pb-ey | 42kw-ko | 59jf-du | 74ba-ap | 90mk-jq |
| 03mh-fL | 15ur-ej | 30cu-gh | 43jz-es | 59rq-au | 74jn-ix | $90 n r-h z$ |
| 03tz-fp | 15vx-ek | 30nv-jn | 44ae-co | 60jn-gL | $74 \mathrm{kr}-\mathrm{gz}$ | 90wg-mt |
| 04ae-jw | 15yz-nu | 31rg-jr | 44zk-nq | 60qf-dp | 74yz-bi | 91Lc-cf |
| 04ir-hs | 16ix-cz | 31zu-aw | 45Lc-ak | 60va-gn | 75bi-ad | 91or-mp |
| 04nh-hn | 16ry-cg | 32ee-dm | 450a-ai | 61eb-iy | 75dh-ku | 91sd-ao |
| 05hd-bp | 17pg-jk | 32kk-dh | 46bt-Lq | 61iu-in | 75ea-jz | 92mv-fy |
| 05ng-am | 17tw-ky | $32 z b-e q$ | 46jn-dt | 61rq-iz | 75es-bs | 92oj-hm |
| 05qm-gg | 17uv-cq | 33ce-ft | 46po-mu | 61tk-mx | 75sw-Ln | $92 u p-d v$ |
| 06nb-is | 17vy-Ly | 33 mv -bg | 46rb-mo | 61xm-at | 77ba-cc | 92zs-LW |
| 06np-cw | 18kr-ct | 34Lo-mv | 46rs-eo | 62La-fm | 77zh-cx | 93dc-hp |
| 06tc-bt | 18wq-bj | 34zt-bb | 47wh-ef | 62mx-cv | 79bb-er | 93gi-ci |
| 06wd-gp | 18wy-nt | $35 \mathrm{Lw}-\mathrm{cr}$ | $47 \times r$-bv | 62wf-an | 79fo-fh | 93ik-mz |
| 07fh-ce | 19md-ip | $35 \times \mathrm{g}$-en | 48eu-ff | 63bm-hh | 79zb-bz | 93tg-aj |
| 07rr-dd | 20bh-np | 36dq-et | 48fv-jj | 63vs-fr | 80ky-dw | 93xn-gj |
| 07sg-fn | 20mk-hi | 36ng-ms | 49bs-iL | 64dc-bo | 82ds - cm | 94hi-de |
| 08jj-fw | 21jh-LL | 36qr-kL | 49ds-Lr | 64fk-ez | 82ni-fu | 94pk-br |
| 08wb-it | 21kv-gk | 37ca-dk | 49ec-ar | 64ot-kx | 82uc-ee | 94yf-fj |
| 09bg-dy | 21xh-jo | 37cz-cs | 49mz-gs | 64vd-kk | 82uw-ah | 95ez-by |
| 09bh-ii | 22ft-ij | $37 \mathrm{en}-\mathrm{nn}$ | 50aq-mr | 64ya-gi | 82vy-fi | 96at-bf |

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| 09ma-di | 22ix-bw | 37fw-fx | 50dm-gq | 65hm-ks | 83ef-js | 96gb-bu |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 09tv-ab | 22yg-go | 37re-ht | 50nm-Lo | 66ur-af | 83 vk -dL | 96tz-ae |
| 10tz-mn | 23gc-bq | 38qj-jx | 50os-fs | 67pg-Lx | 84ch-be | 97hg-ch |
| 10xL-ax | 24gf-cL | 38qz-km | 50tr-kz | 67tb-cj | 84fa-bk | 97ju-dg |
| 11om-kr | 24Le-hv | $38 w q-g m$ | 51gx-as | 68qi-aL | 84jy-bn | 97va-hq |
| 11so-gu | 24Lh-no | 38xo-bx | 5200-jp | 69jw-hu | 84sn-hL | 97zg-az |
| 11 tq -dz | 24me-mm | $39 \mathrm{mp}-\mathrm{eu}$ | 52xa-fq | 69vb-ho | 84yd-gy | $98 \mathrm{av}-\mathrm{kq}$ |
| 12iy-kn | 24uj-eh | 39na-gr | 54im-kt | 69zz-ck | 85ez-iw | 98na-aa |
| 12Lp-ik | 25fd-eg | 39 vv -cp | 54sa-eL | 70mi-fg | 85 gq -bm | 98rr-jt |
| 12uj-ew | 25ic-ay | 39wi-Lv | 55dr-hk | 70zg-aq | 86fs-ns | 98zc-em |
| 12yt-hy | 26aj-ex | 40ui-ei | 56fn-Lp | 71he-ds | 86kp-iu | 99af-dq |
| 12zz-hj | 26ri-nr | 41nh-cd | 56go-Lz | 71Lz-my | 86Lp-fv | 99eb-jy |
| 13at-cy | 27 kr -cu | 41qt-dr | $56 n w-d j$ | 71tg-iv | 86va-bL | 99uo-Lt |
| 13mr-im | 28Lr-ju | 41rk-jm | 56xe-fo | 72ki-dn | 87ri-gv | 99vf-nw |
| 13sy-hx | 28ua-dx | 41rn-kw | 57nd-kp |  |  |  |

Midway 1991 Location Alias Set 17 -- Searching Player Section

Locations to aliases

| A1 - | D7 - | H2 | K8 | 03 | R8 - | dummy - |
| :--- | :--- | :--- | :--- | :--- | ---: | :--- |
| D6 | H1 | K7 | 02 | R7 | dummy | dummy |


| A1-am | D7-cj | H2-en | K8-fw | 03-ix | R8-hx | dummy-in |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| A2-jo | D8-kq | H3-iz | K9-gk | 04-ch | R9-ht | dummy-fh |
| A3-fq | D9-bd | H4-cm | K10-Lo | 05-LL | R10-Lz | dummy - cw |
| A4-ad | D10-cs | H5-ab | K11-er | 06-jx | R11-cf | dummy-eg |
| A5-Lw | D11-fo | H6-hv | L1-bf | 07-bo | S1-dd | dummy-mu |
| A6-cy | E1-gy | H7-co | L2-Ls | 08-gv | S2-bw | dummy-cc |
| A7-km | E2-gg | H8-hu | L3-kL | 09-ir | S3-ff | dummy-mp |
| A8-cv | E3-no | H9-dg | L4-gx | 010-aw | S4-dn | dummy-ip |
| A9-Lu | E4-bv | H10-ew | L5-bn | 011-ko | S5-nw | dummy-nn |
| A10-gp | E5-cn | H11-bg | L6-mn | P1-gz | S6-nu | dummy-an |
| A11-df | E6-jy | I1-kp | L7-go | P2-bu | S7-fz | dummy-js |
| B1-gq | E7-cz | I2-iw | L8-ev | P3-hi | S8-fm | dummy-it |
| B2-aL | E8-dk | I3-hr | L9-cx | P4-ei | S9-ag | dummy-mm |
| B3-gj | E9-kv | I4-dm | L10-hq | P5-iy | S10-dy | dummy-gs |
| B4-io | E10-fi | I5-es | L11-dz | P6-bk | S11-nv | dummy-fg |
| B5-ft | E11-di | I6-ks | M1-ms | P7-ce | T1-iL | dummy-Lt |


| B6-au | F1-ay | I7-dv | M2-gL | P8-gh | T2-do | dummy-hy |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| B7-jq | F2-fs | I8-ct | M3-dL | P9-kz | T3-ci | dummy-gw |
| B8-is | F3-bi | I9-et | M4-jw | P10-bs | T4-ik | dummy-dp |
| B9-bq | F4-de | I10-gn | M5-av | P11-ao | T5-iq | dummy-ah |
| B10-kt | F5-jk | I11-hz | M6-dt | Q1-cq | T6-kk | dummy-bp |
| B11-Lx | F6-Lv | J1-kr | M7-ho | Q2-gr | T7-bh | dummy-jr |
| C1-mz | F7-ez | J2-nr | M8-az | Q3-hh | T8-ax | dummy-nq |
| C2-nt | F8-bz | J3-Lr | M9-cg | Q4-mt | T9-cL | dummy-ap |
| C3-bb | F9-hw | J4-aq | M10-eu | Q5-hn | T10-Lq | dummy-hp |
| C4-gi | F10-jn | J5-dq | M11-dj | Q6-dh | T11-af | dummy-Ly |
| C5-ee | F11-mr | J6-kn | N1-bm | Q7-eo | dummy-jt | dummy-mv |
| C6-fn | G1-ds | $J 7-f x$ | N2-ii | Q8-my | dummy-im | dummy-at |
| C7-ex | G2-br | J8-kx | N3-ju | Q9-by | dummy-gm | dummy-gt |
| C8-ef | G3-bc | J9-fv | N4-mo | Q10-ep | dummy-Lp | dummy-jv |
| C9-ku | G4-jm | J10-hs | N5-jz | Q11-cd | dummy-iu | dummy-ij |
| C10-fy | G5-fr | J11-eh | N6-aa | R1-mq | dummy-bt | dummy-jp |
| C11-ek | G6-fu | K1-ar | N7-ky | R2-be | dummy-ey | dummy-ck |
| D1-kw | G7-gu | K2-Ln | N8-cr | R3-fp | dummy-eL | dummy-aj |
| D2-ac | G8-cu | K3-fj | N9-du | R4-eq | dummy-mw | dummy-hj |
| D3-bL | G9-jj | K4-bj | N10-hL | R5-ak | dummy-hm | dummy-bx |
| D4-fL | G10-iv | K5-dr | N11-fk | R6-Lm | dummy-np | dummy-mx |
| D5-jL | G11-em | K6-hk | 01-dx | R7-ae | dummy-cp | dummy-ns |
| D6-ai | H1-ej | K7-dw | 02-as |  |  |  |

Midway 1991 Location Alias Set 24 -- Non-Searching Player Section

Locations to intermediates

| A1 - | D7 | H2 | K8 | 03 | R8 - | dummy - |
| :--- | :--- | :--- | :--- | :--- | ---: | :--- |
| D6 | H1 | K7 | 02 | R7 | dummy | dummy |


| A1-11mp | D7-73uk |
| :--- | ---: |
| A2-22ke | D8-89qa |
| A3-44xe | D9-21gr |
| A4-73uf | D10-39rp |
| A5-91qz | D11-63jw |
| A6-18vr | E1-79zn |
| A7-42hv | E2-11cL |
| A8-53va | E3-25iw |

H2-34yi
H3-61rg
H4-82vi
H5-03qZ
H6-31fv
H7-49bx
H8-75qV
H9-98tL

| K8-04yw | $03-77 \mathrm{fx}$ |
| ---: | ---: |
| K9-24kL | $04-90 \mathrm{eb}$ |
| K10-49bw | $05-12 \mathrm{kz}$ |
| K11-76zi | $06-40 \mathrm{fb}$ |
| L1-90mg | $07-59 \mathrm{nz}$ |
| L2-20Wz | $08-88 \mathrm{nd}$ |
| L3-37bz | $09-04 \mathrm{Vk}$ |
| L4-61hc | $010-25 \mathrm{ce}$ |


| R8-20aw | dummy-53kn |
| ---: | ---: |
| R9-43ek | dummy-79hL |
| R10-65ew | dummy-05ea |
| R11-88yL | dummy-24jp |
| S1-04aj | dummy-49tk |
| S2-31kg | dummy-76gf |
| S3-45xi | dummy-94ma |
| S4-70hx | dummy-19hL |


| A9-87Lh | E4-48zk | H10-11qx | L5-82qi | 011-48Li | S5-91ex | dummy-43gc |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| A10-03am | E5-68be | H11-37si | L6-06mb | P1-74ss | S6-18ym | dummy-60in |
| A11-25vd | E6-93bh | I1-55qk | L7-27kf | P2-98sg | S7-42ii | dummy-85nx |
| B1-46kg | E7-13dq | I2-82uw | L8-46sy | P3-20fg | S8-65dv | dummy-04pr |
| B2-75ak | E8-36fL | I3-06mc | L9-74tx | P4-36ji | S9-84aa | dummy-28co |
| B3-99bb | E9-61fr | I4-31zd | L10-98tx | P5-59om | S10-06ga | dummy-47aq |
| B4-17dj | E10-79vs | I5-47ez | L11-12jx | P6-77xh | S11-23kv | dummy-71ud |
| B5-36gh | E11-01xz | I6-69jp | M1-40tx | P7-10xz | T1-52rf | dummy-95xc |
| B6-53du | F1-33hi | I7-96bk | M2-56xg | P8-26ka | T2-75yz | dummy-21gp |
| B7-86gg | F2-53do | 18-11xL | M3-82gu | P9-52ws | T3-97bm | dummy-38ej |
| B8-05oc | F3-75ar | I9-37pu | M4-07yf | P10-71pz | T4-11qo | dummy-63wc |
| B9-25ur | F4-98gv | I10-59ja | M5-26jf | P11-91sm | T5-35qp | dummy-85ex |
| B10-49ph | F5-16nn | I11-87it | M6-48Ls | Q1-11sh | T6-60sx | dummy-05jk |
| B11-65mp | F6-38rr | J1-00xk | M7-70um | Q2-34up | T7-84tt | dummy-28dq |
| C1-91je | F7-55kr | J2-31an | M8-94ht | Q3-64bx | T8-05en | dummy-45zv |
| C2-18hi | F8-86wq | J3-47jo | M9-16ka | Q4-85ra | T9-27sq | dummy-67ye |
| c3-35nc | F9-05qn | j4-73qt | M10-39xs | Q5-08Lj | T10-47zc | dummy-90so |
| C4-65ga | F10-31gp | J5-90md | M11-55vd | Q6-29mw | T11-67ak | dummy-15ps |
| C5-86bg | F11-49af | J6-19mc | N1-82jg | Q7-46ec | dummy-98si | dummy-39zx |
| C6-04vt | G1-73ps | J7-34cv | N2-02ot | Q8-74uL | dummy-18kL | dummy-60qh |
| C7-24gt | G2-94oa | J8-58xj | N3-22mz | Q9-92nw | dummy-43ce | dummy-88yr |
| C8-46ao | G3-20yf | j9-85jz | N4-46pi | Q10-20uL | dummy-58kg | dummy-03od |
| c9-76ot | G4-34wr | J10-00iq | N5-73sg | Q11-34zb | dummy-87vh | dummy-23pk |
| C10-98ks | G5-55fh | J11-32fm | N6-92kn | R1-54px | dummy-08yr | dummy-45rt |
| C11-17ew | G6-83yr | K1-45tu | N7-13ro | R2-79xi | dummy-27sz | dummy-71fd |
| D1-38fu | G7-10tu | K2-67vu | N8-34ne | R3-05wp | dummy-47vy | dummy-99nL |
| D2-59fk | G8-23zb | K3-89ga | N9-63cm | R4-23pb | dummy-65zi | dummy-12cf |
| D3-77Ln | G9-45et | K4-18ft | N10-85sw | R5-45bz | dummy-99sm | dummy-41 hf |
| D4-01nh | G10-65sn | K5-43rt | N11-06ps | R6-76vu | dummy-18nf | dummy-58aL |
| D5-30rj | G11-92xr | K6-54wg | 01-28ny | R7-89ey | dummy-39ik | dummy-78hk |
| D6-44bt | H1-20sd | K7-79ek | 02-48aw |  |  |  |

Midway 1991 Location Alias Set 24 -- Non-Searching Player Section

Intermediates to aliases

| 00iq - | 15ps - | 28co - | 43ek - | 55kr - | 73qt | 86gg |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 13ro | 27sz | 43ce | 55fh | 73ps | 86bg | 99sm |

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| 00iq-bv | 15ps-ag | 28co-be | 43ek-bb | 55 kr -fn | 73qt-bt | 86gg-fj |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 00xk-en | 16ka-iv | 28dq-eL | 43 gc - ko | 55qk-ew | 73sg-hv | 86wq-im |
| 01nh-ks | 16nn-kw | 28ny-eg | 43rt-gt | 55vd-bw | 73uf-iu | 87it-fy |
| 01xz-ck | 17dj-jo | 29mw-dh | 44bt-cm | 56xg-dd | 73uk-fu | 87Lh-hk |
| 02ot-jL | 17ew-mu | 30rj-cx | 44xe-cy | 58aL-ad | 74ss-cL | 87vh-nn |
| 03am-ar | 18ft-jk | 31an-hr | 45bz-ej | 58kg-gq | $74 t x$-fh | 88nd-Lt |
| 03od-fs | 18hi-jj | 31fv-bo | 45et-dk | $58 \times j$-as | 74uL-dL | 88yL-bj |
| 03qz-cj | 18kL-fx | 31gp-LL | 45rt-dw | 59fk-eo | 75ak-ij | $88 y r-a i$ |
| 04aj-js | 18nf-dn | 31 kg -do | $45 t u-g u$ | 59ja-jt | 75ar-Ln | 89ey-gp |
| 04pr-af | 18vr-gy | 31zd-nw | $45 \times i-\mathrm{cn}$ | 59nz-fv | 75qv-iq | 89ga-hx |
| 04vk-dx | 18ym-eq | 32fm-Lr | $45 z v-m q$ | 59om-ez | $75 y z-f p$ | 89qa-gn |
| 04vt-mn | 19hL-kL | 33hi-ms | 46ao-in | 60in-ir | 76gf-it | $90 \mathrm{eb}-\mathrm{bg}$ |
| 04yw-ky | 19mc-np | 34 cv -bu | 46 ec -dv | 60qh-az | 76ot-gL | 90md-bf |
| 05ea-bd | 20aw-gr | $34 n e-k q$ | 46kg-ft | 60sx-hi | 76 vu -io | 90mg-bp |
| 05en-ch | 20fg-Lx | 34up-nr | 46pi-cz | 61fr-gz | 76zi-by | 90so-fr |
| 05jk-ho | 20sd-dz | 34wr-fm | 46 sy -ce | $61 \mathrm{hc}-\mathrm{dp}$ | 77 fx -em | 91ex-ax |
| 05oc-de | 20uL-an | $34 y i-c w$ | 47aq-cp | 61 rg -er | 77Ln-Lp | 91je-iy |
| 05qn-no | 20wz-ey | 34zb-mm | 47ez-hm | 63cm-kz | 77xh-mr | 91qz-cd |
| 05wp-ip | 20yf-Lq | 35nc-jx | 47jo-hp | 63jw-nt | 78hk-mt | 91sm-mo |
| 06ga-mv | 21gp-ju | 35qp-ef | 47 vy -kx | 63wc-dj | 79ek-eh | 92kn-bi |
| 06mb-nq | 21gr-hz | 36fL-iz | 47zc-av | 64bx-Lv | 79hL-mw | $92 n w-n u$ |
| 06mc-fw | 22ke-Lz | 36gh-fk | 48aw-ii | $65 d v-h w$ | 79vs-cc | 92xr-iw |
| 06ps-jr | 22mz-hj | 36ji-kv | 48Li-is | 65 ew -ac | 79xi-bz | 93bh-ff |
| 07yf-bn | 23kv-jv | 37bz-hh | 48Ls-aq | 65ga-mp | 79zn-jn | 94ht-gx |
| 08Lj-cs | 23pb-aL | 37pu-fg | 48zk-au | 65mp-ah | 82gu-ex | 94ma-bq |
| 08yr-dr | 23pk-am | 37si-jp | 49af-ev | 65sn-jq | 82jg-eu | 940a-hy |
| 10tu-dy | 23zb-Ly | 38ej-du | 49bw-nv | 65zi-at | 82qi-gv | 95xc-aw |
| 10xz-hq | 24gt-gi | 38fu-ik | 49bx-cv | 67ak-ab | 82 uw -bx | 96bk-ap |
| 11cL-hu | 24jp-hs | 38 rr -bL | 49ph-fq | $67 \mathrm{vu}-\mathrm{kt}$ | 82 vi -ds | 97bm-kp |
| 11mp-ix | 24kL-gg | 39ik-gm | $49 t \mathrm{k}$-cg | 67ye-dq | $83 y r-h t$ | 98gv-cq |
| 11qo-gs | 25ce-Ls | 39rp-km | 52rf-ay | 68be-jy | 84aa-fz | 98ks-ci |
| 11qx-Lm | 25iw-ek | 39xs-dg | 52ws-fi | 69jp-ae | 84tt-jm | 98sg-ak |
| 11sh-ns | 25ur-hn | 39zx-go | 53do-Lu | 70hx-di | 85ex-ep | 98si-gk |
| 11xL-Lo | 25vd-gj | 40fb-aj | 53du-fL | 70um-ku | 85jz-bs | 98tL-jz |
| 12cf-cr | 26jf-my | 40tx-mz | 53 kn -hL | 71fd-ct | 85 nx -dt | 98tx-es |
| 12jx-ei | 26ka-kr | 41hf-ao | 53va-co | 71pz-gh | 85ra-cf | 99bb-br |
| 12kz-kk | 27kf-gw | 42hv-Lw | 54px-jw | 71ud-df | 85sw-ee | $99 n L-e t$ |
| 13dq-bh | 27sq-bk | 42ii-aa | 54wg-mx | 73ps-bc | 86bg-fo | 99sm-kn |

Midway 1991 Location Alias Set 24 -- Searching Player Section

Locations to aliases

| A1 - | D7 - |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| D6 | H1 | K7 | $03-$ | R8 - dummy - |
| D7 | 02 | R7 | dummy | dummy |


| A1-ix | D7-fu | H2-cw | K8-ky | 03-em | R8-gr | dummy-hL |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| A2-Lz | D8-gn | H3-er | K9-gg | 04-bg | R9-bb | dummy-mw |
| A3-cy | D9-hz | H4-ds | K10-nv | 05-kk | R10-ac | dummy-bd |
| A4-iu | D10-km | H5-cj | K11-by | 06-aj | R11-bj | dummy-hs |
| A5-cd | D11-nt | H6-bo | L1-bp | 07-fv | S1-js | dummy-cg |
| A6-gy | E1-jn | H7-cv | L2-ey | 08-Lt | S2-do | dummy-it |
| A7-LW | E2-hu | H8-iq | L3-hh | 09-dx | S3-cn | dummy-bq |
| A8-co | E3-ek | H9-jz | L4-dp | 010-Ls | S4-di | dummy-kL |
| A9-hk | E4-au | H10-Lm | L5-gv | 011-is | S5-ax | dummy-ko |
| A10-ar | E5-jy | H11-jp | L6-nq | P1-CL | S6-eq | dummy-ir |
| A11-gj | E6-ff | I1-ew | L7-gw | P2-ak | S7-aa | dummy-dt |
| B1-ft | E7-bh | I2-bx | L8-ce | P3-LX | S8-hw | dummy-af |
| B2-ij | E8-iz | I3-fw | L9-fh | P4-kv | S9-fz | dummy-be |
| B3-br | E9-gz | I4-nw | L10-es | P5-ez | S10-mv | dummy-cp |
| B4-jo | E10-cc | I5-hm | L11-ei | P6-mr | S11-jv | dummy-df |
| B5-fk | E11-ck | I6-ae | M1-mz | P7-hq | T1-ay | dummy-aw |
| B6-fL | F1-ms | I7-ap | M2-dd | P8-kr | T2-fp | dummy-ju |
| B7-fj | F2-Lu | I8-Lo | M3-ex | P9-fi | T3-kp | dummy-du |
| B8-de | F3-Ln | I9-fg | M4-bn | P10-gh | T4-gs | dummy-dj |
| B9-hn | F4-cq | I10-jt | M5-my | P11-mo | T5-ef | dummy-ep |
| B10-fq | F5-kw | I11-fy | M6-aq | Q1-ns | T6-hi | dummy - ho |
| B11-ah | F6-bL | J1-en | M7-ku | Q2-nr | T7-jm | dummy-eL |
| C1-iy | F7-fn | J2-hr | M8-gx | Q3-Lv | T8-ch | dummy-mq |
| C2-jj | F8-im | J3-hp | M9-iv | Q4-cf | T9-bk | dummy-dq |
| C3-jx | F9-no | J4-bt | M10-dg | Q5-cs | T10-av | dummy-fr |
| C4-mp | F10-LL | J5-bf | M11-bw | Q6-dh | T11-ab | dummy-ag |
| C5-fo | F11-ev | J6-np | N1-eu | Q7-dv | dummy-gk | dummy-go |
| C6-mn | G1-bc | J7-bu | N2-jL | Q8-dL | dummy-fx | dummy-az |
| C7-gi | G2-hy | J8-as | N3-hj | Q9-nu | dummy-bm | dummy-ai |
| c8-in | G3-Lq | J9-bs | N4-cz | Q10-an | dummy-gq | dummy-fs |


| C9-gL | G4-fm | J10-bv | N5-hv | Q11-mm | dummy-nn | dummy-am |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| C10-ci | G5-dm | J11-Lr | N6-bi | R1-jw | dummy-dr | dummy-dw |
| C11-mu | G6-ht | K1-gu | N7-cu | R2-bz | dummy-iL | dummy-ct |
| D1-ik | G7-dy | K2-kt | N8-kq | R3-ip | dummy-kx | dummy-et |
| D2-eo | G8-Ly | K3-hx | N9-kz | R4-aL | dummy-at | dummy-cr |
| D3-Lp | G9-dk | K4-jk | N10-ee | R5-ej | dummy-kn | dummy-ao |
| D4-ks | G10-jq | K5-gt | N11-jr | R6-io | dummy-dn | dummy-ad |
| D5-cx | G11-iw | K6-mx | 01-eg | R7-gp | dummy-gm | dummy-mt |
| D6-cm | H1-dz | K7-eh | 02-ii |  |  |  |

Midway 1991 Moves Transition Alias Set 31 -- Non-Searching Player Section

Locations to intermediates

| A1 - | D1 - | G1 - | J1 - | M1 | P1 - | S1 - |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| C11 | F11 | I11 | L11 | 011 | R11 | dummy |


| A1-05yi | D1-39cu |
| ---: | ---: |
| A2-22Lv | D2-60pi |
| A3-46Lj | D3-88qp |
| A4-64hx | D4-08so |
| A5-92eh | D5-28eq |
| A6-12iv | D6-45hi |
| A7-33uo | D7-70is |
| A8-49ue | D8-94yc |
| A9-86bb | D9-14pp |
| A10-01di | D10-34id |
| A11-28jv | D11-53hz |
| B1-47et | E1-79vs |
| B2-66yx | E2-03nd |
| B3-97ek | E3-32ym |
| B4-14kv | E4-48nb |
| B5-41cm | E5-71za |
| B6-62Lc | E6-92ap |
| B7-89sn | E7-16rv |
| B8-10Lz | E8-34zd |
| B9-23ew | E9-59pp |
| B10-43Lf | E10-89sf |
| B11-78qc | E11-10xo |


| G1-68vi | J1-05tw |
| ---: | ---: |
| G2-95rm | J2-25to |
| G3-13gr | J3-48on |
| G4-40uf | J4-74fo |
| G5-58Lm | J5-93sx |
| G6-87Lk | J6-13jL |
| G7-03po | J7-39cc |
| G8-27df | J8-53fd |
| G9-44nf | J9-82ui |
| G10-66jv | J10-08pp |
| G11-94bd | J11-25xn |
| H1-22hs | K1-46qx |
| H2-40cq | K2-77pd |
| H3-52zc | K3-93ea |
| H4-85fz | K4-18vx |
| H5-04pb | K5-37dd |
| H6-22jb | K6-57tw |
| H7-49rw | K7-79nh |
| H8-78rw | K8-07hv |
| H9-94jj | K9-30qr |
| H10-20jy | K10-48xv |
| H11-39sv | K11-70as |


| M1-39kf | P1-78ke | S1-03dm |
| :---: | :---: | :---: |
| M2-56cd | P2-94gz | S2-26iy |
| M3-87qe | P3-21ti | S3-48gx |
| M4-05oe | P4-34nr | S4-67qn |
| M5-23qs | P5-60ux | S5-91dd |
| M6-45wo | P6-83tn | S6-14kL |
| M7-70co | P7-02rm | S7-33ru |
| M8-96pt | P8-33kq | S8-57om |
| M9-22fi | P9-47md | S9-80xs |
| M10-38pe | P10-68au | S10-03oc |
| M11-58tf | P11-98ep | S11-25px |
| N1-81wu | Q1-13fj | T1-44cq |
| N2-11io | Q2-38Lr | T2-78tc |
| N3-22ie | Q3-58dm | T3-92bx |
| N4-49cg | Q4-83wq | T4-17Lt |
| N5-66wo | Q5-06qv | T5-41ie |
| N6-97pn | Q6-24xt | T6-57hs |
| N7-17xe | Q7-46kf | T7-78zr |
| N8-37tv | Q8-70wv | T8-00af |
| N9-50fw | Q9-96tc | T9-24sk |
| N10-83vq | Q10-14kd | T10-43wj |
| N11-01ah | Q11-41qw | T11-68zo |


| C1-94Lt | F1-26ba | I1-50mb | L1-97yh | 01-31zh | R1-53jb | dummy-90we |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| C2-19mq | F2-47so | I2-81jj | L2-12py | 02-41va | R2-87or | dummy-21br |
| C3-39nL | F3-69as | I3-04uj | L3-33pw | 03-76tj | R3-11ud | dummy-40zj |
| C4-57Lj | F4-93ud | I4-29yh | L4-60xx | 04-92bz | R4-27ux | dummy-52mk |
| C5-88md | F5-15jm | I5-47zd | L5-85tu | 05-21bL | R5-43Ly | dummy-80zp |
| C6-05pv | F6-37tf | I6-64gj | L6-08bj | 06-38ts | R6-72cd | dummy-11ht |
| C7-31ep | F7-59tr | I7-92rh | L7-24ey | 07-64bm | R7-95be | dummy-27vy |
| c8-45jd | F8-81hd | I8-17ws | L8-47yL | 08-79im | R8-19ub | dummy-47ui |
| c9-76ys | F9-01tr | I9-39ja | L9-67ft | 09-07nr | R9-36qd | dummy-78ad |
| c10-99sp | F10-30en | I10-55zn | L10-98Li | 010-22qh | R10-50ys | dummy-96La |
| C11-210L | F11-44Lr | I11-81za | L11-15sz | 011-44mg | R11-88bw |  |

Midway 1991 Moves Transition Alias Set 31-- Non-Searching Player Section

| 00af - | 14kv - | 27 x | 41cm - | 52mk - | 70co | 87qe |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 14kL | 27df | 40zj | 50ys | 70as | $870 r$ | 99sp |
| 00af-2i | 14kv-6d | 27ux-0t | $41 \mathrm{~cm}-8 \mathrm{q}$ | 52mk-5j | 70co-0c | 87qe-0t |
| 01ah-7i | 14pp-8q | 27vy-6t | 41ie-6b | 52zc-0t | 70is-6b | 88bw-1v |
| 01di-4c | 15jm-8q | $28 \mathrm{eq}-3 \mathrm{u}$ | 41qw-8e | 53fd-6u | 70wv-8j | 88md-3s |
| 01tr-6d | 15sz-0b | 28jv-3v | 41va-7w | 53hz-1L | 71za-2L | 88qp-3t |
| 02rm-5e | 16rv-2q | 29yh-2k | $43 L f-2 r$ | 53jb-3b | 72cd-3b | 89sf-6b |
| 03dm-2i | 17Lt-2r | 30en-8o | 43Ly-1m | $55 z n-5 e$ | 74fo-2L | 89sn-2e |
| 03nd-5c | 17ws-3t | $30 q r-2 r$ | 43wj-8j | 56cd-0c | 76tj-4g | 90we-7u |
| 03oc-4c | 17xe-3v | $31 \mathrm{ep}-4 \mathrm{k}$ | $44 \mathrm{cq}-2 \mathrm{~d}$ | 57hs-8t | 76ys-8o | 91dd-3t |
| 03po-4g | 18vx-4p | $31 z h-2 i$ | 44Lr-2i | 57Lj-4c | $77 \mathrm{pd}-6 \mathrm{u}$ | 92ap-6c |
| 04pb-8t | 19mq-2r | $32 \mathrm{ym}-5 \mathrm{e}$ | $44 m g-1 q$ | 57om-6d | 78ad-6i | 92bx-6d |
| 04uj-3v | 19ub-1v | $33 \mathrm{kq}-3 \mathrm{~s}$ | 44nf-1L | 57 tw -2i | 78ke-8q | 92bz-1L |
| 050e-20 | 20jy-2d | $33 p w-7 i$ | 45hi-7g | 58dm-2e | $78 q c-5 e$ | 92eh-2k |
| 05pv-5b | 21bL-0f | $33 \mathrm{ru}-6 \mathrm{c}$ | 45jd-2k | 58Lm-2e | 78rw-0c | 92rh-3u |
| 05tw-7g | 21br-5d | 33uo-0f | 45wo-2k | 58tf-8f | 78tc-0c | 93ea-4c |
| 05yi-1c | 210L-8f | 34id-6u | 46kf-7i | 59pp-0a | 78zr-5b | 93sx-6z |
| 06qv-8t | 21ti-2r | 34nr-80 | 46Lj-80 | 59tr-4p | 79im-0b | 93ud-20 |
| 07hv-7w | 22fi-0m | 34zd-1m | 46qx-3s | 60pi-3q | 79nh-1c | 94bd-7x |
| 07nr-6c | 22hs-2L | 36qd-5b | $47 \mathrm{et}-3 \mathrm{u}$ | 60ux-8j | 79vs-0m | $94 \mathrm{gz-6z}$ |
| 08bj-1q | 22ie-5b | 37dd-0b | 47md-7i | 60xx-0w | 80xs-0w | 94jj-8q |
| 08pp-5b | 22jb-6d | 37tf-0f | 47so-1q | 62Lc-0b | 80zp-1i | 94Lt-7x |

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| 08so-2i | $22 L v-0 b$ | $37 t v-1 L$ | $47 u i-8 c$ | $64 b m-20$ | $81 h d-8 j$ | $94 y c-1 v$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $10 L z-3 q$ | $22 q h-4 g$ | $38 L r-3 t$ | $47 y L-7 i$ | $64 g j-5 e$ | $81 j j-1 q$ | $95 b e-2 e$ |
| $10 x o-6 q$ | $23 e w-0 t$ | $38 p e-6 d$ | $47 z d-3 b$ | $64 h x-20$ | $81 w u-2 e$ | $95 r m-6 d$ |
| $11 h t-3 a$ | $23 q s-3 s$ | $38 t s-6 b$ | $48 g x-6 u$ | $66 j v-7 i$ | $81 z a-4 p$ | $96 L a-7 k$ |
| $11 i o-6 b$ | $24 e y-8 e$ | $39 c c-2 d$ | $48 n b-4 g$ | $66 w o-8 f$ | $82 u i-0 a$ | $96 p t-7 g$ |
| $11 u d-5 e$ | $24 s k-2 k$ | $39 c u-20$ | $48 o n-0 m$ | $66 y x-1 m$ | $83 t n-2 i$ | $96 t c-3 v$ |
| $12 i v-8 e$ | $24 x t-6 u$ | $39 j a-0 w$ | $48 x v-2 k$ | $67 f t-0 f$ | $83 v q-2 q$ | $97 e k-2 d$ |
| $12 p y-1 v$ | $25 p x-7 w$ | $39 k f-0 a$ | $49 c g-3 t$ | $67 q n-4 k$ | $83 w q-8 e$ | $97 p n-4 p$ |
| $13 f j-2 q$ | $25 t o-2 e$ | $39 n L-6 c$ | $49 r w-5 c$ | $68 a u-0 a$ | $85 f z-1 L$ | $97 y h-0 f$ |
| $13 g r-3 b$ | $25 x n-8 e$ | $39 s v-7 g$ | $49 u e-2 d$ | $68 v i-3 t$ | $85 t u-8 t$ | $98 e p-3 u$ |
| $13 j L-1 v$ | $26 b a-0 b$ | $40 c q-7 w$ | $50 f w-8 e$ | $68 z o-5 b$ | $86 b b-2 q$ | $98 L i-7 x$ |
| $14 k d-2 L$ | $26 i y-0 m$ | $40 u f-3 u$ | $50 m b-1 v$ | $69 a s-6 q$ | $87 L k-1 c$ | $99 s p-1 q$ |
| $14 k L-3 v$ | $27 d f-7 x$ | $40 z j-4 u$ | $50 y s-8 f$ | $70 a s-6 u$ | $87 o r-80$ |  |

Midway 1991 Moves Transition Alias Set 31-- Searching Player Section

Locations to aliases

| A1 - | D1 - | G1 - | J1 | M1 | P1 - | S1 - |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| C11 | F11 | I11 | L11 | 011 | R11 | dummy |


| A1-1c | D1-20 | G1-3t | J1-7g | M1-0a | P1-8q | S1-2i |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| A2-0b | D2-3q | G2-6d | J2-2e | M2-0c | P2-6z | S2-0m |
| A3-80 | D3-3t | G3-3b | J3-0m | M3-0t | P3-2r | S3-6u |
| A4-20 | D4-2i | G4-3u | J4-2L | M4-20 | P4-80 | S4-4k |
| A5-2k | D5-3u | G5-2e | J5-6z | M5-3s | P5-8j | S5-3t |
| A6-8e | D6-7g | G6-1c | J6-1v | M6-2k | P6-2i | S6-3v |
| A7-0f | D7-6b | G7-4g | J7-2d | M7-0c | P7-5e | S7-6c |
| A8-2d | D8-1v | G8-7x | J8-6u | M8-7g | P8-3s | S8-6d |
| A9-2q | D9-8q | G9-1L | J9-0a | M9-0m | P9-7i | S9-0w |
| A10-4c | D10-6u | G10-7i | J10-5b | M10-6d | P10-0a | S10-4c |
| A11-3v | D11-1L | G11-7x | J11-8e | M11-8f | P11-3u | S11-7w |
| B1-3u | E1-0m | H1-2L | K1-3s | N1-2e | Q1-2q | T1-2d |
| B2-1m | E2-5c | H2-7w | K2-6u | N2-6b | Q2-3t | T2-0c |
| B3-2d | E3-5e | H3-0t | K3-4c | N3-5b | Q3-2e | T3-6d |
| B4-6d | E4-4g | H4-1L | K4-4p | N4-3t | Q4-8e | T4-2r |
| B5-8q | E5-2L | H5-8t | K5-0b | N5-8f | Q5-8t | T5-6b |
| B6-0b | E6-6c | H6-6d | K6-2i | N6-4p | Q6-6u | T6-8t |
| B7-2e | E7-2q | H7-5c | K7-1c | N7-3v | Q7-7i | T7-5b |


| B8-3q | E8-1m | H8-0c | K8-7w | N8-1L | Q8-8j | T8-2i |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| B9-0t | E9-0a | н9-8q | K9-2r | N9-8e | Q9-3v | T9-2k |
| B10-2r | E10-6b | H10-2d | K10-2k | N10-2q | Q10-2L | T10-8j |
| B11-5e | E11-6q | H11-7g | K11-6u | N11-7i | Q11-8e | T11-5b |
| C1-7x | F1-0b | I1-1v | L1-0f | 01-2i | R1-3b | dummy-7u |
| C2-2r | F2-1q | I2-1q | L2-1v | 02-7w | R2-80 | dummy-5d |
| C3-6c | F3-6q | I3-3v | L3-7i | 03-4g | R3-5e | dummy-4u |
| C4-4c | F4-20 | I4-2k | L4-0w | 04-1L | R4-0t | dummy-5j |
| C5-3s | F5-8q | I5-3b | L5-8t | 05-0f | R5-1m | dummy-1i |
| c6-5b | F6-0f | 16-5e | L6-1q | 06-6b | R6-3b | dummy-3a |
| C7-4k | F7-4p | I7-3u | L7-8e | 07-20 | R7-2e | dummy-6t |
| C8-2k | F8-8j | 18-3t | L8-7i | 08-0b | R8-1v | dummy-8c |
| c9-80 | F9-6d | I9-0w | L9-0f | 09-6c | R9-5b | dummy-6i |
| C10-1q | F10-80 | I10-5e | L10-7x | 010-4g | R10-8f | dummy-7k |
| C11-8f | F11-2i | I11-4p | L11-0b | 011-1q | R11-1v |  |


[^0]:    ${ }^{1}$ The aliases here aren't names, but alphanumeric strings.

[^1]:    ${ }^{2}$ An Alias Set is a complete list of all searchable locations and their aliases.
    ${ }^{3}$ If the players used only one Alias Set, then if both players searched the same area, they'd use the same alias, and could learn an area ID that the other player searched even if neither found the other side.

[^2]:    ${ }^{4}$ Side B may have accidentally noticed that J1 has the intermediate of " 00 xk ", but he won't accidentally see the alias for "00xk" when looking up "31an" because those two intermediates are not near each other in the list of intermediates to aliases.
    ${ }^{5}$ Record hex ID, intermediate, and alias together so you don't accidentally use the wrong intermediate for a hex ID when looking up the alias.

[^3]:    ${ }^{6}$ The use of upper-case L is merely to distinguish it from the digit 1 when printed.

