

An UNUSUAL Problem

Created by Nick Ballard (1990)

Lexicon: OSPD-1 (Official Scrabble Players Dictionary, first edition)

In the final round of the National Championship, where the top ten finishers will be paid, you are one of 20(!) people tied on win/loss record for first place who are paired on the top boards. On point spread, you are last, being 700 points behind the leaders. You must win this game just to finish in the money.

Your opponent just played 15B OFFERED, increasing his lead to 333 points. Beneath the board are listed: (a) your rack (for which “?” represents a blank); and (b) the 13 remaining tiles unseen by you (some seven of which are on the opponent’s rack, and the other six of which are in the bag).

On the verge of despair, you suddenly notice that with an unusual play, and a lot of luck, you can still win! **What is your best play?**

[Here are some words that are acceptable in NWL-2023 that could arise that were *not* acceptable in 1990: **AB**, AG, AL, **EW**, HM, **MO**, **UH**, **UM**, ZA, BAM, GOV, GUV, HAO, **IGG**, LAV, **LUV**, MAX, **MUX**, **NUG**, OBA, OXO, SHA, SUQ, **ULU**, VOG, VUM, GRAN, HOLDS, LUMA, MOSH, PUJA, SHWA, **SULU**, LOUMA, PUJAH, WUSHU. The ones in boldface font are especially noteworthy. These 36 words, and their applicable plurals, are off limits—nonexistent—for this puzzle.]

The puzzle position appears below, followed by the solution.



Your rack: ? A L S U U U Unseen: GGHJMOQVVWWXZ

Solution

Origin

In the autumn of 1990, while traveling to tournaments, I circulated flyers with the above puzzle as a promotion for my new Scrabble newsletter, the title of which matched my phone number 633-5397 (M-E-D-L-E-Y-S). The puzzle's solution was published in the first issue of *Medleys* (January 1991).

One of the first subscribers, Stu Goldman, had a marvelous sense of humor. He mailed me a detailed handwritten chronicle pertaining to this position, upgrading the arcane designations of P (for Player) and O (for Opponent) to stand for the names "Preposterous" and "Opportunistic." Then he reconstructed the entire game as it might be played to reach this position, with racks, plays and analysis: the works. We miss you, Stu.

I designed this composition for enjoyment at multiple skill levels. For less experienced players, I wanted the puzzle to seem non-trivial but still easy. The reader could find UnUSUAL and then spot the hook for the blank N above ONCE (possibly needing to check the dictionary for NONCE.) They could then write in to proudly submit their solution and hopefully include with it a \$30 subscription check. It worked!

Given that your initial deficit is 333 points, when you play UnUSUAL (64), the situation looks worse than it actually is. If the right tiles happen to be in the bag, you can end up losing the game by as few as 17 points. This will seem less incredible soon, when certain facets of the position are revealed.

In this article, your esteemed **opponent** is referred to as “Opp” (also “she”).

Heart of the Puzzle

Experts paying attention to the problem conditions—realizing that it is a must-win situation—didn’t fall for UnUSUAL. Examining the 13 unseen tiles, they figured out that if **GHMOVZ** is in the bag (and thus Opp’s rack is GJQVWWX) and if five or six of these tiles could somehow be combined with the A and/or the blank on their rack, they would be able to play a 15-letter word on the far left column!

As expected, the methods by which the experts sought to get down this magnificent word varied considerably. A few of them recommended passing five tiles, keeping the A and the blank. This is certainly the most direct way. However, they either forgot a rule or miscounted the unseen tiles; it is illegal to pass when there are fewer than seven tiles in the bag!

(If there was an open C, F or T on the board, you would love to add the six letter string <UmULUS> to it, but none of those letters is open. It is a given that “KUmULUS,” “UvULUS” or other phony will be challenged off; otherwise analysis is meaningless.)

OVEREMPHASIZING played as a 3x3x3 (triple-triple-triple) bingo for 1444 points wins you first prize in this prestigious tournament!

The best plan for accomplishing this is:

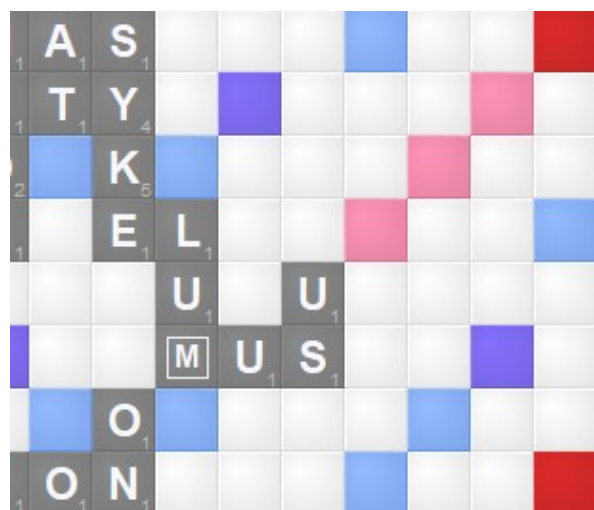
1. “Freeze” Opp’s rack by blocking all her legal moves from a rack of GJQVWWX.
2. Play out all your tiles except the A and/or the blank in such a way that she still can’t move.
- 3.
4. Accumulate the GHMOVZ tiles in the bag.
- 5.
6. Play the 15-letter bingo.

For step 1, you simultaneously block the E and O (upper center) where Opp might play EX, OX or OW. Funny thing—this is only possible if you burn your blank! (If you use your A instead, Opp will play AW or AX and draw one of the vital tiles you need.)

There are dozens of three- and four-letter words (all containing a U and a blank) that achieve step 1. The trick, though, is to look ahead and make sure that you can dump the second and third U without intervention. Only two such words succeed: LUm and LUx, played vertically (simultaneously forming EL) for a measly 4 points. Several experts found a reason to support one blank designation or the other (M or X).

After LUm, you continue unopposed with mUS (not mU, which allows mUG) followed by the one-tile play of US! The position playing these three moves is illustrated in the left-hand diagram below. (The left side and bottom of the board are not showing.)

During this careful and deliberate one-sided sequence, Opp, who has been aching to make a move, can now play her J with JUS. However, you have already emptied the bag and can bingo with OVEREMPHASIZING for 1444 points, erasing your deficit and winning the game by 1177 points!



LUm plays all three U's this way



LUx plays all three U's this way

Alternately, if you make the blank an X with LUx, you follow with xU (which doesn't pluralize) and US/ELS, obtaining in essence the same result. You win the game by 1161 points. Refer to the right-hand diagram above.

After LUx and xU, the placement of US (hooking EL) might seem odd. BLET/US (below the area shown) scores more points for your S and reduces Opp's J score by 16 points. However, this can only matter if one of the players atop the tournament standings catches you by winning *his* final game by more than 460 points. We can reasonably assume that won't happen, as winning a game even by 200+ points rarely occurs between experts. The reason that EL/US is usually a better placement will be revealed shortly.

LUM or LUX?

So, LUM and LUX are equally best for tournament-winning chances. Are they also equally best, then, for *game*-winning chances? Actually, no!

If, after playing LUM (and Opp passes), you draw two G's (dashing your hopes for the 15-letter word), you can still hope that Opp is stuck with JQVVWWX—which means that **GGHMOZ** is in the bag. If you draw GGH or GGM or GGO or GGZ respectively, you alertly switch to SIZING or OCARINAS (neither is visible here) or UGH or ALUM, eventually making all four of those plays as well as inserting S/UGH, GUM and MU when you can. You pick up 42 x 2 points from Opp's rack and win by 3 points, which is good enough to win 10th prize in the tournament. See the left-hand diagram below.

Critically, "ALUX" is not a word. If the blank is an X, the best spot for the A (if it is played last) is at the bottom of the full board, forming BA/AD, which loses by 1 point. This subtle variation was the intended determinant of the solution. That is, the initial deficit of 333 points was compositionally retrofitted to make LUM win and LUX lose.



Extra G is in the bag instead of V.
LUM wins 20%, LUX wins 0%.



Extra G and J are in bag instead of HV.
LUX wins 100%, LUM wins 58%.

Upon later reviewing my analysis in the January 1991 edition of *Medleys*, I discovered another determinant for comparing LUM to LUX. The relevant Opp rack is HQVVWWX, which means that **GGJMOZ** is in the bag.

If you play LUX, you have no better continuation than xU followed by US, hooking EL/S, as LUX cannot win with a GGHMOZ bag even when you draw two G's immediately. However, the compensation is now revealed in the 53-point J setup: LUX works out better when the bag is GGJMOZ and the J is not drawn early. In parallel, the LUM alternative with J appearing late induces you to burn a crucial bridge.

Specifically, after LUm, if you draw GMO, GMZ, GOZ or MOZ with the J still hiding in the bag, you play mUS (because you think you can still win the tournament) and fail to win the game. Or if you draw GGM, or GGO and then M, you are out of stalls and have to *guess* whether (a) H is in the bag (you might commit to ALUm as in the *left-hand* sequence), or (b) J is in the bag (you might play mU, essentially matching the *right-hand* sequence—which sets up the J for a 5-point win). This overlap defrays LUm’s efficiency.

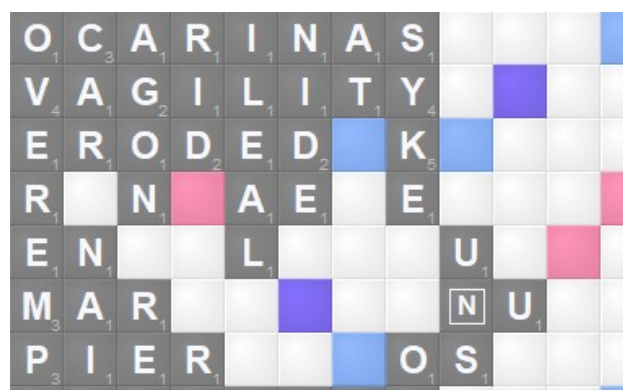
On balance, taking into account the two supplemental racks, LUX is the best play, though it is only a hair better than LUm.

Other Blank-burners

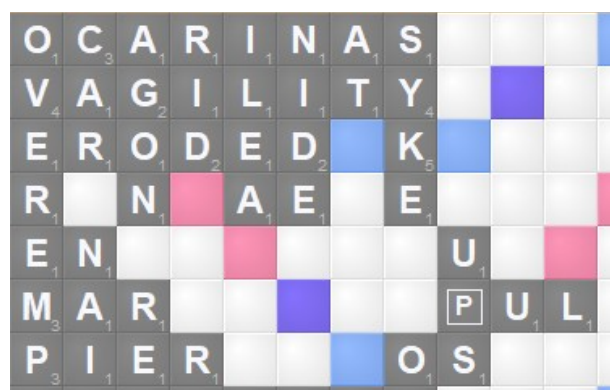
There are more than 60 plays that can win the game, but most of them are just inferior versions of LUX or LUm. Some of these candidates make it possible to play off a second U (but not the third) and for a few that U-play is even *unanswerable*. None make it possible to play out your tiles and collect *twice* the value of Opp’s rack, nor do they allow you to bingo, and the unplayed U (or two) occupies valuable space on your rack. However, depending on how lucky your tile-picking order is, most of these plays make it possible to play the 15-letter word in *two or three stages*.

The strongest of these weaker rivals is UnS. Next, you play your L with ILEAL and a U with nU (still giving Opp no play) and you’ll be stuck with only one U. Once you have accumulated all the tiles from the bag that you can, you play off the O or the G+Z. Unless O is the last tile in the bag, you can optimize with OCARINAS (30) followed by the other six tiles in one go, scoring OVEREMPHASIZING as a 554-point triple-triple. You eat the U, but Opp eats GJQVWWX. You win the game by 309 points, enough to earn you (about) 6th place prize in the tournament. See left-hand diagram below.

Along with UnS, blank burners that always win against this rack are UpS (with pUL follow-up, see right-hand diagram below) and **S**Un and SUp, with the S played three squares higher. Those three alternatives win by fewer spread points (than UnS) on average, which means that you instead of placing 5th, 6th or 7th in the tournament you will very occasionally finish one place less worse off



Playing UUL tiles, giving Opp no play



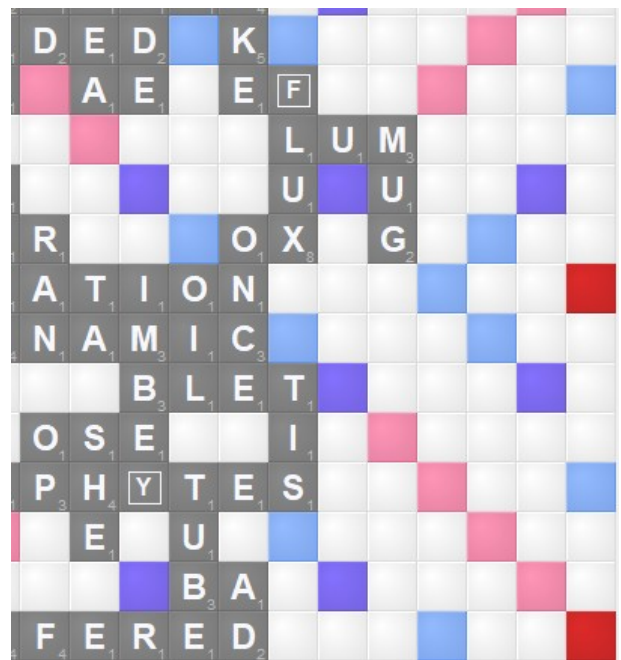
Similar idea but for 9 fewer points

If the word LUm is hooked to the O (forming Om) instead of the E, I call it “lower LUm.” You win the game in the same way that UnS does against the GJQVWWX rack but (due to restrictive tile-drawing orders) only 87% instead of 100% of the time. On the other hand, lower LUm can win in the trenches against two additional racks: (1) HJQVVWW with GGOMXZ in the bag, and (2) GJQVVWW with GHOMXZ in the bag.

Against the first of those racks, you win by 6 points by playing SIZING, OCARINAS, LUX, XU, OSE, MOm and BAG—see the left-hand diagram below. Against the other rack, the sequence is identical except you replace BAG with BAH and win by 4 points.



Twin wins, strong S and M play



Twin X setups: HUM can replace MUG

There is yet another play, fLU, that seems almost irresistible once you spot the setup. It wins against two racks:

Against HJQVVWW (GGMOVX is in the bag), in whatever order you can you play fLUX (35 points), SIZING, OCARINAS, OSE, LUM, MU, MUG and out with BA, as shown in the right-hand diagram above. Against GJQVVWW (GHMOVX in the bag), the sequence is the same, except it ends with HUM, BA (instead of MU, MUG, BA). These sequences win by 14 and 8, respectively, so you can afford an inaccuracy or two.

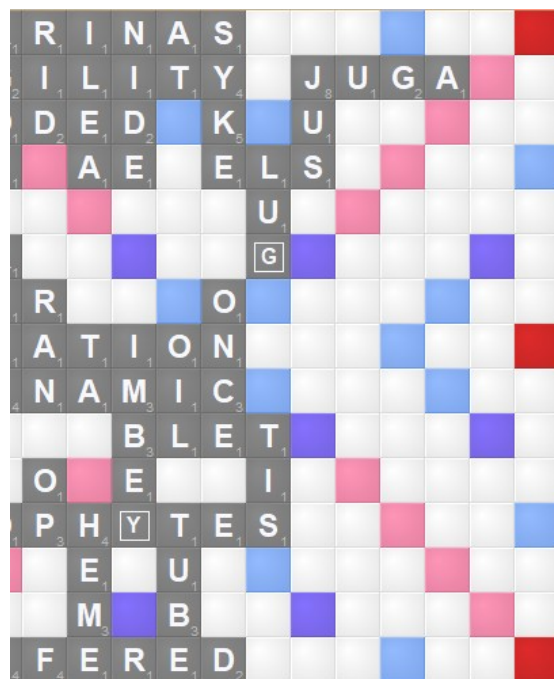
fLU is cool and has no draw-order issues (it will win 100% of the time in those situations). However, it has “U-itis”—meaning that it has trouble shedding another U, or doing so without giving Opp a play off of it—and cannot win the typical 15-letter word variations that many other plays in that spot (or one space lower) *can* win.

Two other plays that win 87% of the time against the main GJQVWWX rack can each win against another rack:

- ➔ mUS against JQVWWX (GGHMOZ in bag): in some order, OCARINA, SIZING, HUG, BA, BAL, MU wins by 6 points. See left-hand diagram.
- ➔ LUg against HQVWWX (GGJMOZ in bag): in some order, OCARINAS, SIZING, HEME, US, JUGA (last) wins by 3 points. This is similar to the LUx, XU, JUG plan (but without the benefit of playing a U independently to the right of the blank when the drawing order is troublesome). See right-hand diagram.



Nice setups for H and M



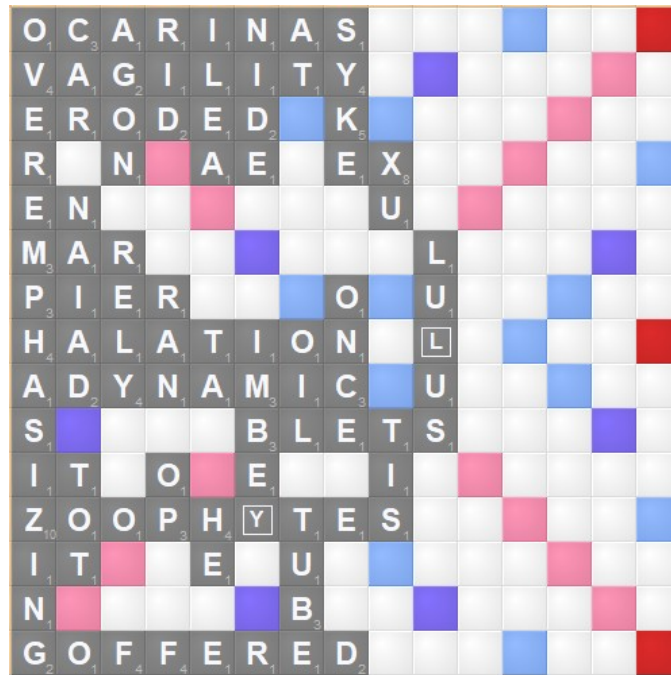
A familiar J setup

For the left-hand sequence with mUS, it also works to start with nUS. However, because a U cannot be played after En (whereas it *can* be after Em to form EmU), nUS is another example of a play with U-it-is. It is sometimes clearly worse than mUS and never better.

One of the weakest but most intriguing blank burners is LU?US (hooking BLET), the blank being an L, P or S. If Opp can play the X, she draws (takes away) a tile you need to complete the 15-letter word; or if she has GJQVWW, she can't play a tile but (as there is no V in the bag) you still can't win.

However, if Opp has a rack of the form GZ + [5 of GJQVWW], it will be in her interest to take a small risk of losing an otherwise unlosable game in order to win by a ton more points most of the time and finish higher in the tournament.

When Opp plays SIZING (for 158), she draws the worst tile 12% of the time and ends up with a final six-tile rack of GJQVWW. After your AHMOV tiles neatly fill in the rest of the 15-letter word (that could only have been attained with Opp's help), you go out with XU and win by 22 points. (See below.) Overall, LU?US has a 1/1021 chance of winning.



LU?US wins by the SIZING reversal theme

Most of the blank-burning plays that have any chance to win at all, including LUm and LUx and the others mentioned above, benefit at least supplementally from the SIZING reversal theme. When Opp has one of the relevant racks with GZ and no other play, she should risk SIZING. In essence, the two of you are profiting through cooperation, raising your average joint winnings against the rest of the tournament field.

SOUL of the Puzzle

Remarkably, there exists a pair of two additional plays that can win the whole tournament, and one of them wins the game more often than LUx or LUm!

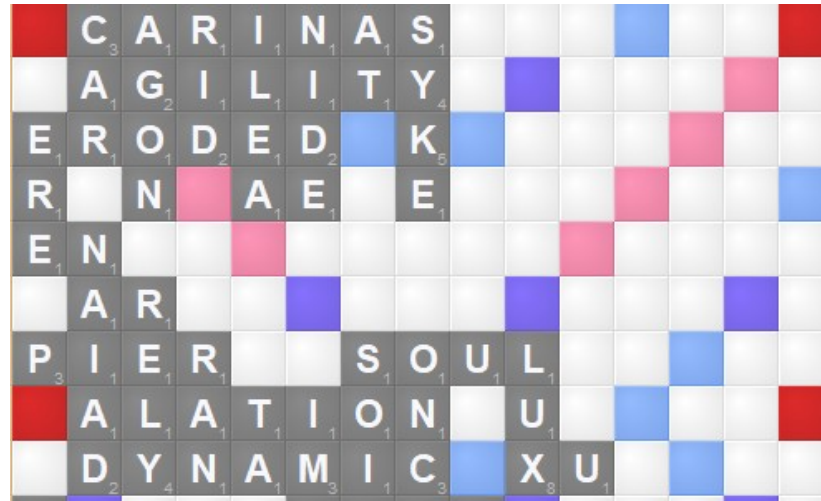
The plays in question are SOU and SOUL, played horizontally through the O at the center of the board. The underlying concept is to permit Opp to play one tile to the right of the open E, and you can use your blank—as a replacement for the tile she takes from the bag—to fill out OVEREMPHASIZING. We'll examine SOUL, and later address its minor differences with SOU.

If you are fortunate, Opp holds GJQVVWW (the only rack that denies her a play off the E), which means that GHMOXZ is in the bag. As the V's are not split between her rack and the bag, the chances of this are 2/1716—which is only half as likely as Opp having the rack that LUx and LUm crush.

There is a second 50% haircut. You need to draw the X immediately (3 chances in 6) so that you can follow SOUL with LUX and XU (see diagram below). The other two tiles you draw with the X plus the last three tiles you draw, added to the A and blank on your rack, give you ?AGHMOZ.

As you play OvEREMPHASIZING, you are further hit with a score reduction because the blank (played as the V) is counted as zero, but that part virtually never matters; you still win the game by 1051 points, which should easily be enough to win the tournament.

Even if one of the first three tiles you draw is *not* an X (50%), an additional 30% of the time, you draw O and/or G+Z early enough to get down OCARINAS and/or SIZING followed by the rest of the 15-letter word (in two or three stages) and win the game.



SOUL's plan to dump the other two U's

The variations that allow SOUL to win *only the game* and never the tournament are complex and fascinating. The analysis to cover them could easily fill a large book. Rather, we'll just touch on some highlights.

SOUL has a chance to win against 24 possible Opp racks (with probabilities that range from 1/1716 to 8/1716), though it takes some luck. Of these, 18 of can be described as W + [5 of GJQVWX] + H, M, or V. The other six racks contain GZ + [5 of JQVWWX], but let's put those aside and address them last.

Depending on which of the 18 (non-Z) racks Opp has, she plays the X (with XU off your U in SOUL) or the H (with EH) or the M (with HEME at the bottom). The chance for her to draw the replacement tile that you need to be on her final rack is 1/6 (or 2/6 if it's G or V when GG or VV is in the bag).

To simplify it conceptually, assume that you play SOUL, Opp plays off her X, H or M, and now you let her draw from the bag first (out of turn, but probabilistically it comes to the same thing). With luck, the bag then contains "Z + [4 of GHMOV]" when you make your 3-tile draw to replace the S, U and L that you played off with SOUL. Your replenished rack is [blank + AUU] plus three of the tiles inside the quotation marks.

If Opp, having played one tile, is able to play another on the following turn, you need for two of the three tiles you have drawn to be G and Z, so that you can play SIZING and empty the bag. This way, when Opp plays her second tile, she cannot draw one of the vital tiles you need for the 15-letter word.

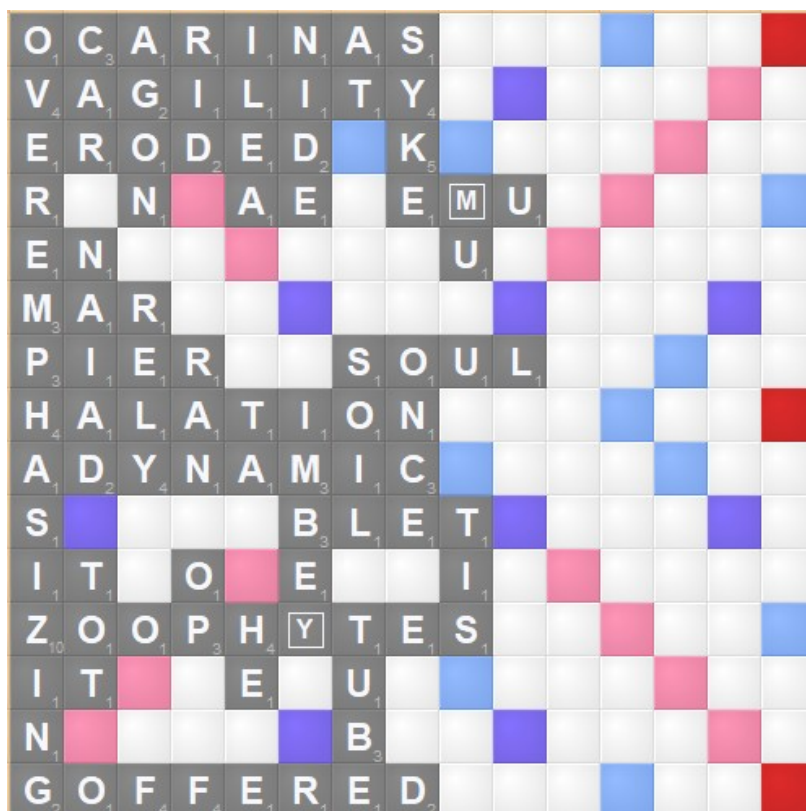
If Opp plays off her X and ends up with the impotent GJQVWW, you don't need to have drawn Z+G. It will also work to draw GO or OZ (plus H or M), play the O and *then* draw whichever you need of G or Z.

Finally, as promised, we examine the six Opp racks containing Z, five of which also contain a G. These are the most interesting. Opp plays SIZING for 158 points, which usually boosts her standings in the tournament and wins her a lot more money. However, there is a 1/15 chance (or 2/15 in the one instance that two V's are in the bag) that she will draw a specific tile pair that will allow you to win.

For example, suppose Opp holds GJVWWXZ, plays SIZING and draws GQ (very lucky for you). Her new rack is GJQVWWX. (Five of the six Z-rack scenarios transpose to reach this precise situation.) You now have only one winning move; brace yourself.

You spend your blank for just 2 points with mU, which blocks both of the spots that Opp can play her X. She has to pass. You have now drawn the last tile in the bag and your rack is AHMOVU. You play OVEREMPHA- down to SIZING (that Opp played) as a triple-triple for 554 points. Opp passes again and you go out with EmU (and it is too late for Opp to play her X off of it). You collect twice her rack and win the game by 15 points. The final position is shown below.

You make this stunning mU play even if you have already drawn the M. The point is that if you play MU and later EMU without the blank, you score only 6 extra points there, whereas when you play the M instead of the blank in OVEREMPHASIZING, you score an extra 30 points. With MU, you lose the game by 9. With mU, you win it by 15.



Instead of playing SIZING, Opp can play the X (with XU). However, if she draws the Q and you have drawn the G (which might have been on your previous rack as far as she knows), you can use your blank to play SIZING for 78 points and follow with the 15-letter word as a 324-point triple-triple. You are stuck with two U's, but Opp is stuck with GJQVWWZ. You win by 110 points.

Opp also doesn't want to *pass* with that rack (GJQVWWXZ), because if you have drawn the V, you know that she doesn't have the only frozen rack (GJQVWW) and must be holding back GZ, and in that case you may as well play SIZING. In short, Opp should play SIZING at the first opportunity (as most often it gives her a gigantic win).

Reviewing Opp's options: when she plays SIZING, she wins big most of the time (thereby earning a greater prize in the tournament) and loses only 1 time in 15 (with the GQ draw). If instead, she plays the X, she loses at least as often. If she passes, all you have to do to gain it is to play SIZING.

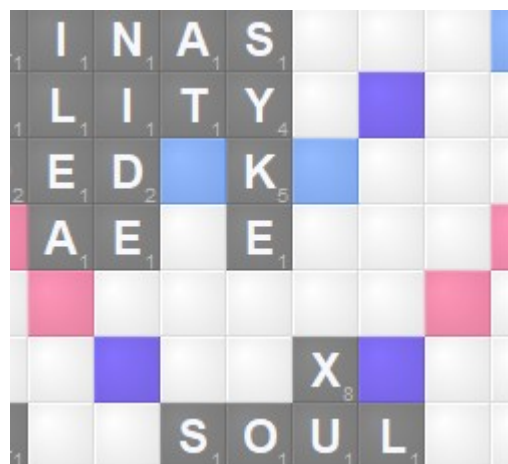
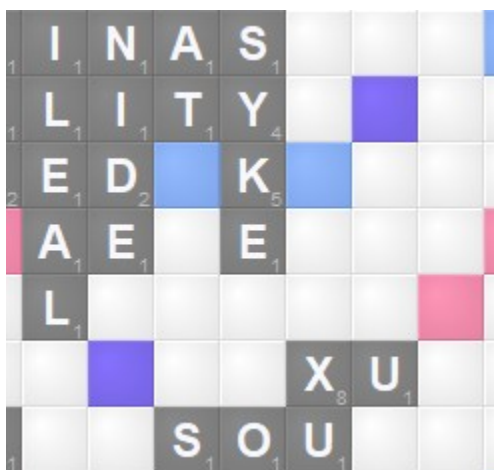
The sixth Z-rack is JQVWWXZ. Unable to play SIZING, Opp plays her X with XU and draws the G. From here, it plays out as in the main variation (go back three paragraphs) where Opp incorrectly chose to play her X when her better option was SIZING.

So, SOU me

SOU can win the tournament just as often as SOUL, as this can occur only if Opp's rack is frozen (it is GJQVWW); you simply extend SOU to SOUL and transpose. The issue, then, is whether SOU or SOUL wins the *game* more often.

SOU has a subtle advantage. If Opp plays her X with XU, draws, and ends up with GJQVWW, you can nimbly hook your L onto ILEA/L, as shown in the left-hand diagram below. This allows you to play one of your U's off her X with XU. If your first three tiles drawn are GHM, GHZ or HMZ, you are not jammed up, thanks to having played off one of your remaining U's and freeing up a space on your rack. You will automatically acquire either the O or the other half of Z+G and win.

Compare that to what happens with SOUL when Opp likewise plays XU, as shown in the right-hand diagram. You cannot play off another U because "UL" is not a word.



On the other hand, SOU has a big drawback: It can't win against the six racks with H or the six racks with M, because you have turned over one less tile and *cannot empty the bag* with SIZING. Opp plays either the H or M, and the X, successively, and draws one of one of the other tiles that you crucially need for the 15-letter word.

On balance, SOUL wins the game significantly more often than SOU.

What the 'EL (?)

There are many non-blank candidates that give you some small chance of winning. The most noteworthy of these is the lone L-play of EL, which blocks the open E instead of the open O. It cannot win the tournament, because in order to play OVEREMPHASIZING as a bingo, you need to clear all three U's off your rack. That is possible to do from LUX, LUM, SOUL or SOU, but not from EL.

The issue is that Opp's GJQVWW is no longer a frozen rack. While "EW" was not acceptable in 1990, OW *was* acceptable and that ends your first place hopes.

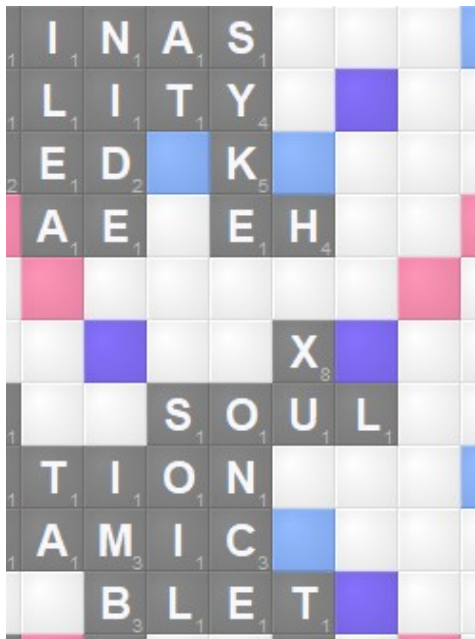
Let us suppose we just want to know the best play to win the game. The GJQVWW rack no longer takes on a massively overriding proportion; it is given only 3 or 6 times the weight of the other 23 aforementioned racks. (For non-frozen racks, there is a parlay: when Opp plays a tile, you need her to make a specific draw of G, V, J, Q, W or X).

A noteworthy advantage of EL is that it can win against six extra racks that contain a second G (unlike SOUL or SOU, where you will be left with EGG on your face. (Opp then draws two tiles and you can't win.)

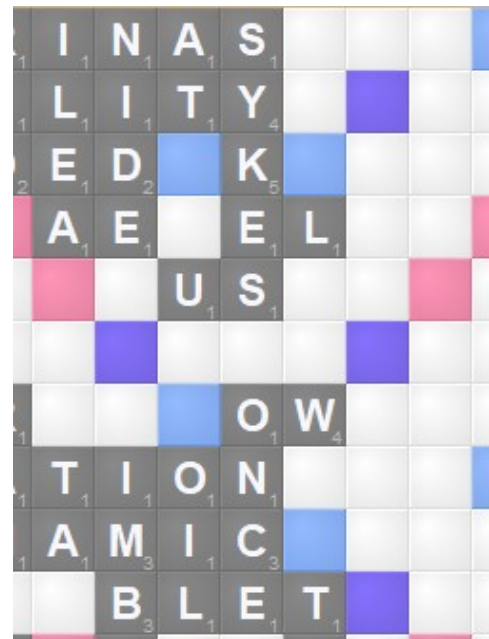
On the other hand, EL cannot win against the six M-racks, because M has an independent spot (HEME) and, as with SOU, you have not yet played your third tile and cannot empty the bag before Opp makes her second play and draws another tile. In a direct comparison with SOUL, EL's chance of success against the (less probable) racks with the second G offset only half of its failure against the M-racks.

A cute theme is that against the H-racks, EL does substantially better than SOUL (and SOU cannot win at all). SOU/L gives Opp a spot (whereas EL does not) for her X (XU) and she can play the H separately with EH, as shown in the left-hand diagram below. She draws two tiles: a deal-breaker for you. By contrast, after EL, Opp is able to play off only *one* of her tiles (the W, H or X), as shown in the right-hand diagram below.

It might seem that in exchange for this gain, EL loses the value of playing off one of your U's (as SOUL leads out with one). However, that is not the case. After Opp plays OW (or OH), you can *hide* your U with US/SYKES (utilizing the S you withheld), as illustrated. Opp can play neither her X off your U nor her J off of your US.



Opp played off two tiles



Opp played off only one tile

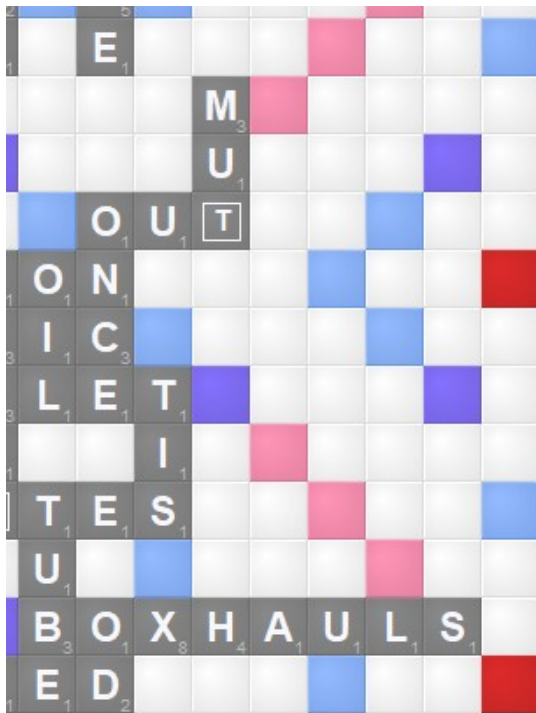
Including the times that the whole tournament is won, the game-winning chances of EL are higher than SOU but lower than SOUL, LUm or LUX. For specifics, refer to the Summary section at the end.

Other Bingos

Experts are resourceful at finding bingos that might offer even the slimmest of winning chances in an otherwise seemingly hopeless position. One of the *Medleys* subscribers pointed out that if Opp is holding GJQVVWW (which we know has no legal play off the E in SYKE), you can play OUt (or OUd, or OUr), then MUt (or MUd, or rUM) with SIZING before or after it, then go out with BOXHAULS (109) to win by 15 (or 13) points! In the 2x2 matrix below, refer to the upper left-hand diagram (the one with the top and left parts of the board cut off.)

This sequence is possible only with 48/720 tile-picking orders, which, when multiplied by the odds of Opp being stuck with GJQVVWW to being with, comes out to a one in 12,870 chance for OU? to win. But it is possible.

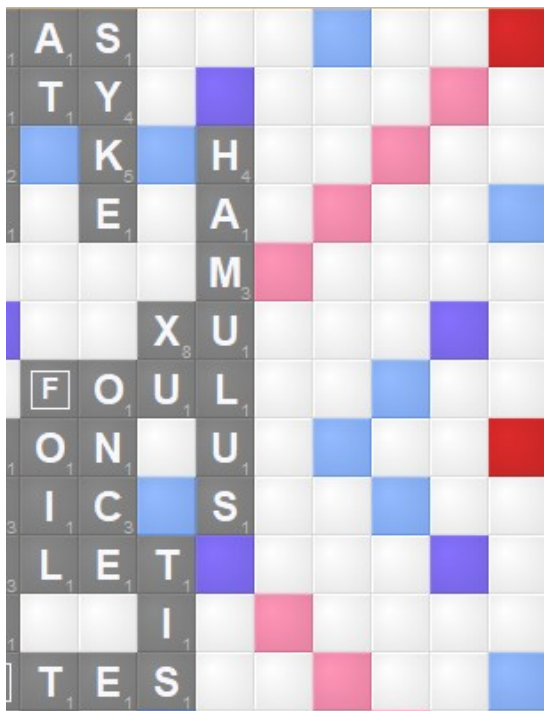
It turns out that OU? can also connect with *another* bingo. You can play off your X and your G+Z with SIZING and your O with OCARINAS (in any order) and go out with HAMULUS (hooking the S onto OU?). See the grid's upper right diagram (with the bottom and left parts of the board cut off). HAMULUS is more likely to be attained than BOXHAULS, but between the two of them (factoring out the overlap), OU? gives you a 1/7460 chance to win.



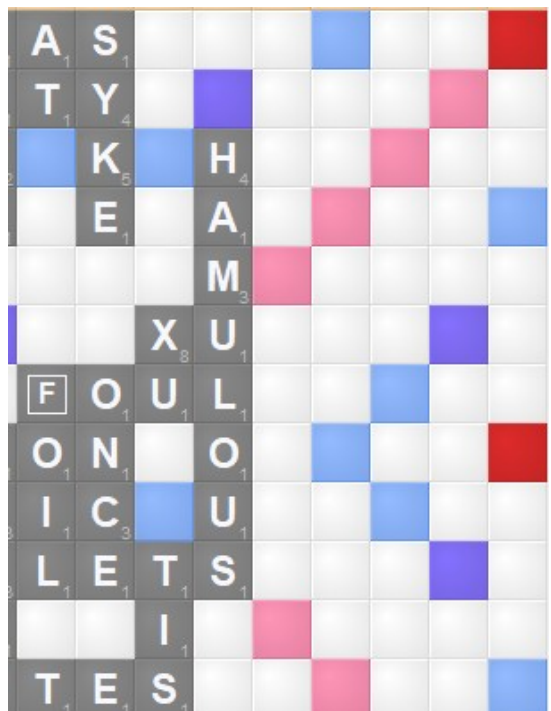
BOXer lands a knockout punch.



I exist; therefore, I HAM.



The HAM you lust



HAMming it up

Remarkably, a better version of this is obtained from fOU or sOU, sliding the blank three squares to the left. Neither word can be hooked with an S, but it *can* be hooked with an L. The improvement is that *you don't have to go out* with HAMULUS; it can be the second-to-last play. When Opp plays AW for 5 points, you will have drawn the last tile in the bag and can go out with whichever play you haven't yet made (OCARINAS, SIZING or XU)

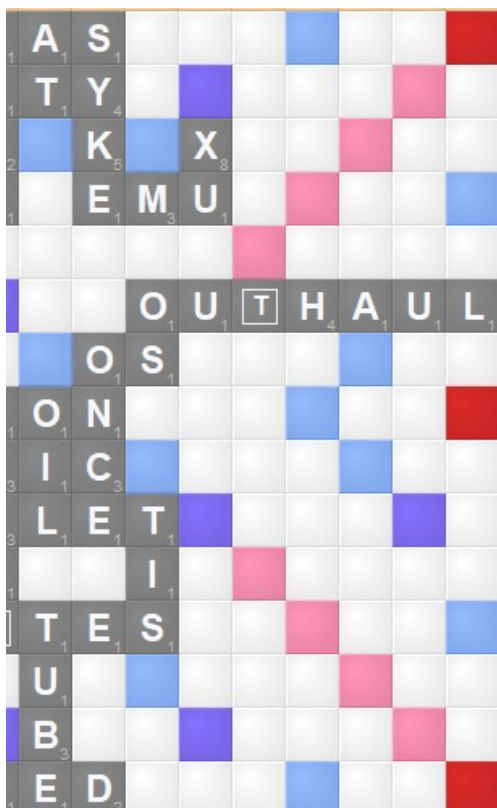
and win by 2 points. Compare the lower left diagram with the previous one, where you must *go out* with HAMULUS; otherwise, JAW (or VAW or WAW) beats you.

There is a bonus benefit of fOU (or sOU). If you draw neither G+Z nor O early enough and neither bingo has manifested, you can scrap the BOXHAULS path by playing away the X and if you still don't draw the O or have G+Z, then as a last resort you can hook the L to make fOUL (or sOUL). If you finally pair G and Z, you play SIZING to empty the bag and go out with the 8-letter bingo HAMULOUS through the L. You don't get the 30 points for OCARINAS, but as full compensation you get BLETS and no AW for Opp. Again you win by 2 points. See the right-hand diagram just above.

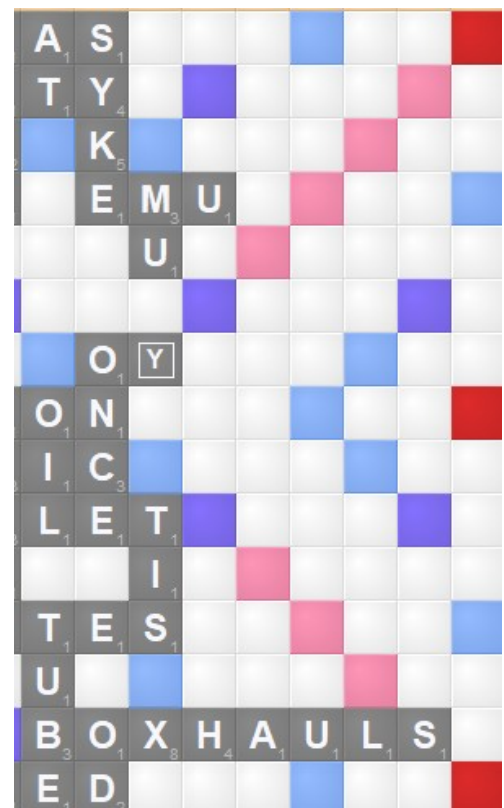
Accounting for all of that, fOU (or sOU) wins 48% of the time. Parlaying that with the chance of Opp having the necessary rack (GJQVVWW), fOU yields a 1/1787 chance.

There are other bingos that could be set up and played if one or more of the U's on your rack were on Opp's rack (which would result in it still being frozen): GOULASH and LOGJAMS (hooking the S on OUr) and perhaps QUAHOGS or JUGULUM come to mind. As it is, you are locked in to ownership of all three U's, and you need the rest of GJQVVWW to be on Opp's rack. That is, none of H, L, M or X can be subbed in because that would allow her to make a play, and you need the Z for SIZING.

Another bingo that can actually be played is attained by a sequence starting with the single-S play of OS (keeping the blank), followed by EM, XU/EMU and SIZING in some order and capped off by OUtHAUL. See below. However, it loses by 17 points.



Can't really carry its weight



Playing a blank for 1 point

This one-tile play of OS leads to a certain alternate bingo that was previously shown, but it doesn't quite work. If you draw the M and play MU next to the E, Opp will insert his G in between with MUGS. Or if you play EMU without first safeguarding that U, Opp can play JUG (or VUG). Either way, this happens before you are able to empty the bag (you haven't had time to draw G+Z), so Opp will draw tile(s) and you won't get your bingo.

This suggests a cleverer one-tile play. You plunk down the *blank* on the same square to the right of the O, and you make that blank (which you are expending for just 1 point!) any permissible letter other than an E or S. That way you can safely play MU, then EMU, and by that time you will hopefully have drawn the G+Z for SIZING. Finally, you go out with BOXHAULS and win by 20 points. See the right-hand diagram above.

Given that you need a highly specific drawing order, your chance of pulling off the above sequence is only one in 25,740. You are 44 times as likely to win with OS, which does not have the BOXHAULS path but can win in other ways that have to do with playing the 15-letter word in stages by virtue of keeping the blank. To put OS into perspective, it is almost half as likely to win as is SOU.

Summary

LUX and LUM, and to a lesser extent SOUL and SOU, have much higher equity than any other candidate because of the possibility of winning the tournament. LUX or LUM is four times as likely to do so as is SOUL or SOU, because Opp is twice as likely to have GJQVWWX as she is GJQVVWW, and SOU/SOUL relies on the additional luck of drawing the X (a 50:50 chance) so that she can shed her other two U's.

LUX, LUM, SOUL, SOU and EL can all win the *game* against the six Z-racks that were discussed, based on Opp playing SIZING or you playing SIZING. For this subset, there is no substantial difference between the five candidates.

Against racks with two G's, EL can win the game but SOUL and SOU cannot. Against the H-racks, EL does a bit better than SOUL (despite its turnover), while SOU can't win at all. Against the M racks, SOUL can win the game but SOU and EL cannot.

LUX and LUM have token surface-street wins, barely eking out a win for a 10th place finish against specifically JQVVWWX and HQVVWWX. These variations are useful for breaking the "best play" tie between LUX and LUM, but they are hairline for measuring game-winning chances broadly.

Based on the prizes posted at one of the nationals of that era, for this puzzle I applied the prizes of 1st through 10th as: \$10,000, 4000, 2000, 1000, 550, 500, 400, 300, 200 and 100. For each candidate play, accounting for the chances of winning the tournament, and winning the game by various margins, the dollar amount you win on average is reported in the table below. Beneath that, the puzzle diagram is repeated for convenient reference.

Candidate	\$ won	Wins
LUx	\$23.59	8.5
LUm	23.57	8.3
SOUL	6.72	9.0
SOU	6.37	6.2
UnS*, SUn	0.86	4.0
EL	0.85	7.2
LUm*	0.85	5.9
UpS*, SUp	0.84	4.0
mUS	0.80	4.5
LUg	0.77	4.5
<i>Several I4/I5* plays omitted</i>		
ALATIONS	0.45	3.1
OS	0.38	2.9
<i>Many I4/I5* plays omitted</i>		
ELS	0.31	3.4
SOL	0.28	2.2
US at I6	0.23	1.8
fLU	0.18	3.0
LU?US (blank is L, P or S)	0.11	1.7
<i>A few plays omitted</i>		
nUS*	0.06	1.0
fOU (or sOU)	0.06	1.0
OUt (or OUd or OUr)	0.03	0.5
<i>Several worse plays omitted</i>		

[Plays with an asterisk start at I5 (using board notation) one square lower than the main candidate of LUx or LUm (at I4). “Wins” are out of the convenient denominator of 1716; for example, 9 wins converts to one chance in 191 to win the game.]

It might seem like a lot of mental gymnastics to fight for a few extra dollars in equity. But think of the stories you get to tell!

You will find a more recent puzzle with UNUSUAL at the link below. Search the page for “Scrabble.”

<https://timothychow.net/cv.html>

Do you have comments or questions? Please e-mail one or both of these addresses:

nack2000@sbcglobal.net

tchow@alum.mit.edu



Your rack: ? A L S U U U Unseen: GGHJMOQVVWWXZ