

Riichi Mahjong Folding Technique Primer

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Although the ideal outcome of a mahjong hand is that you win the hand, since mahjong is a four-player game, most of the time the win will go to a different player. When an opponent does end up winning, the next-best outcome for you is to not lose — that is, to avoid discarding the winning tile and taking full responsibility for point payments. While there will be times where your best tactic is to take on additional risk and push forward, when you find yourself in a situation where folding is prudent, consider the following techniques in order to play the safest defense.

To be clear, this primer will not delve into when it is good to push forward, and when it is good to fold. Its focus is solely on outlining common defensive techniques that identify which tiles are **safest** to discard. While there are also techniques that suggest which tiles might be more dangerous to discard, they are mostly outside of the scope of this primer.

In this primer, topics prefaced by a gold star are primary techniques you should put your attention on first. Meanwhile, topics with a silver star are trickier to make use of, or are less prevalent than the primary techniques.

☆ Why we read opponents' discards and calls

Let's get some misconceptions out of the way first. Largely, when we analyze an opponent's discard pool and called sets, it is **not** to figure out what they might be waiting on. Rather, it is the other way around: we look at their discards and calls to figure out which tiles they **aren't** waiting on. In a situation where we are folding our hand, we no longer care about our hand's composition or ability to win. Our priority is to avoid dealing in, which means identifying and discarding the safest tiles first.

Additionally, dealing in is not necessarily a failure of defense. Mahjong is a game heavy with luck and probabilities, and your opponents also get to choose how they develop their own hands. So you can make the right decision to fold, and make the best decisions on the safest tiles to discard, and you can still deal in and lose. Playing mahjong means accepting that sometimes you will be unlucky. Playing better means finding ways to reduce the impact and threat of poor luck (and, in the opposite direction, to be able to capitalize on or create opportunities for good luck).

☆ Absolutely safe tiles (*genbutsu*)

The foundation of defense in Riichi Mahjong is built up from its *furiten* rule. *Furiten* prevents a player from declaring a win on another player's discard (*ron*), though it does not prevent winning on a self-drawn tile (*tsumo*). Tiles that have absolutely no chance of dealing into a particular opponent are called *genbutsu*. So when we decide to fold, we should discard *genbutsu* tiles first. Below, conditions for *furiten* are listed in the left column, and the tiles that must be *genbutsu* based on those conditions are listed on the right.

Discard *furiten*: If a player's discards contain a tile that would complete their hand, they may not call *ron*, regardless of if that tile would give the hand a valid scoring pattern (*yaku*) or not.

Discarded tiles that match any of an opponent's discards are absolutely safe from *ron* against that opponent (though not necessarily safe against other players).

Declined win *furiten*: If a player chooses not to (or is unable to) call *ron* on another player's discard, they may not call *ron* until after they make their next tile draw.

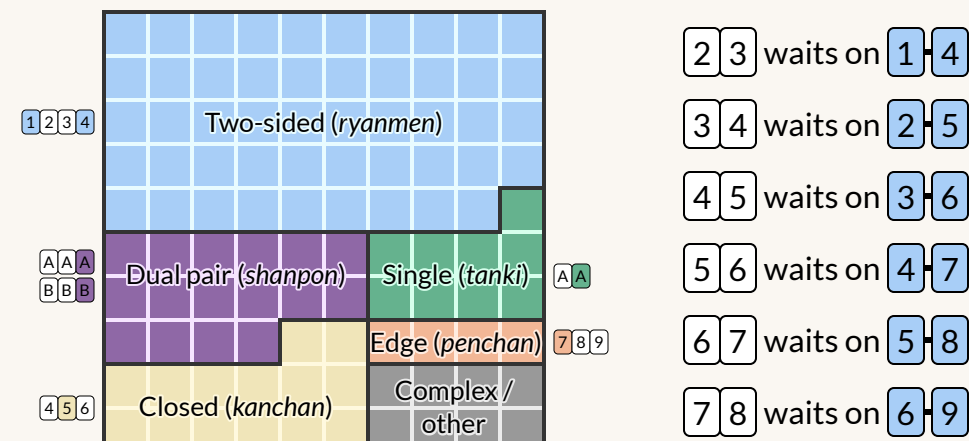
Immediately matching the last discard made by the player on your left is absolutely safe. Matching the last discard made by the player across from you is safe against the player to your right (assuming the across player's turn hasn't been skipped due to a call).

Riichi *furiten*: If a player is in *riichi*, declined win *furiten* becomes a permanent state, since it is known that the player cannot change their hand composition and possibly change their wait.

Discarded tiles that match any discard from any player at any time after the *riichi* declaration are absolutely safe from *ron* by the *riichi* player.

★ Two-sided (*ryanmen*) waits and *suji*

Approximately half of all final (*tenpai*) waits are two-sided *ryanmen* waits: holding two consecutive tiles that can become a sequence by acquiring a tile on either side (see below left). In each numeric suit, there are six possible *ryanmen* waits (see below right):



adapted from MJ5パーフェクトデータブック, as cited in これだけで勝てる! 麻雀の基本形80, p.79

The high frequency of *ryanmen* waits, combined with *furiten* rules, mean that tiles that are *suji*, or a 3-tile difference, to *genbutsu* tiles are generally safer than other tiles that are non-*suji* (*musuji*) to *genbutsu* tiles. For example, if a 5 is present in a player's discards, or is discarded by anyone after they called *riichi*, it implies that 2 and 8 are safer than other tiles in that suit since, due to *furiten* rules, that player cannot call *ron* on 2 or 8 if they have a *ryanmen* wait.

<i>Genbutsu</i> :	4	5	6	1 & 7	2 & 8	3 & 9
Safer <i>suji</i> :	1 & 7	2 & 8	3 & 9	4	5	6

Note that 4, 5, and 6 require two *genbutsu* tiles to be considered full *suji* in terms of safety, since each have two different *ryanmen* waits that they can be part of. For example, a discarded 2 will improve the safety of discarding 5, but it could still deal into a 5-8 wait (a "half-*suji*" status). This also means that fully *musuji* 456 are about twice as dangerous to discard as *musuji* 123789.

★ Relative tile safety chart

Based on the principles of *genbutsu* and *suji*, a hierarchy of tile safety can be assumed based on how many ways they can be used to declare a win. When we fold, we want to discard the tiles closest to the top of the table first.

		<i>ryanmen</i>	<i>kanchan</i>	<i>penchan</i>	<i>shanpon</i>	<i>tanki</i>
S	<i>Genbutsu</i> tiles	×	×	×	×	×
*	Honor tiles	×	×	×	○	○
A	<i>Suji</i> 1 or 9	×	×	×	○	○
	Full <i>suji</i> 4, 5, or 6	×	○	×	○	○
B	<i>Suji</i> 2 or 8	×	○	×	○	○
	<i>Suji</i> 3 or 7	×	○	○	○	○
C	Non- <i>suji</i> 1 or 9	○	×	×	○	○
	Half <i>suji</i> 4, 5, or 6	○	○	×	○	○
	Non- <i>suji</i> 2 or 8	○	○	×	○	○
D	Non- <i>suji</i> 3 or 7	○	○	○	○	○
	Full non- <i>suji</i> 4, 5, or 6	◎	○	×	○	○

There is a fairly large safety gap between *suji* tiles (**B** rank and above) and non-*suji* tiles (**C** rank and below). If you want to push a **C** or **D** rank tile forward against a threatening opponent, you should make sure you have a good reason for doing so if you also have safer tiles available (for example, being in *tenpai* with good score potential or a good wait).

Note that this tier list simply groups tiles by relative safety. As a hand progresses, any tile that is not absolutely safe will gradually become more dangerous due to there being fewer possibilities for what an opponent's winning tile could be. If we've eliminated many possible *ryanmen* waits, you'll need to more seriously consider that the opponent isn't actually on a *ryanmen* wait, and even *suji* tiles can become risky.

This rough safety order can also shift depending on other information we can see in the game state; the most common considerations are summarized in the remaining topics of this primer.

★ Honor tile safety

You may have noticed that honor tiles were not given a strict letter grade in the general tile safety chart. Discarding an honor tile can vary wildly in safety level from the top of **A** to the bottom of **B**, depending on how many copies of that honor tile you can see, including all discards, called sets, and your own hand.

	If you can see:	Discarding the honor can deal into:
S-	4 honor copies	Thirteen Orphans (<i>kokushi musou</i>)
A+	3 honor copies	+ Single (<i>tanki</i>) wait
A	2 honor copies	+ Dual pair (<i>shanpon</i>) wait
B	1 honor copy	Same as 2 visible honors

Note: if you have multiple copies of a tile in your hand, the safety level of discarding any of them will be at the highest row from all copies you can see.

If the only copy of an honor tile you can see is in your own hand (bottom row of the table above), you should be especially cautious of discarding it towards the latter half of a hand. Due to their limited ability to form sets, honor tiles are often discarded early in a hand for the sake of keeping tiles with better efficiency. As such, it becomes increasingly suspicious if a particular honor does not show up in the discards as the hand progresses. Past the halfway point of a hand, a 'live' honor tile (*shonpai*) can become more dangerous than any numeric *suji* tile (**B-** rank). Even once-discarded (two copies visible) honors can be as dangerous as numeric *suji* tiles (**B** rank) in the last few discards of a hand.

☆ No-chance (*kabe*) and one-chance tiles

The above chart for honors also applies to numeric tiles in terms of locking out *shanpon* and *tanki* wait possibilities. If we can observe three copies of a tile, a *shanpon* wait is impossible; if we observe all four copies, a *tanki* wait is also impossible. Of course, the other types of wait (*penchan*, *kanchan*, and especially *ryanmen*) are still dominant factors in judging numeric tiles' safety; having multiple copies of a numeric tile in hand is no guarantee that discarding them will be 'safe' if the tile is non-*suji*. (That said, if you don't have any tiles of **B** rank or better, discarding a triplet or pair of **C** rank tiles can buy some time to draw or learn information about safer tiles — assuming that the first one you discard passes through safely.)

Interestingly, seeing all four copies of a numeric tile can improve the safety of nearby tiles. Observing a blockade (*kabe*) means that there is "no chance" that the tile can be in an opponent's hand; this in turn means that certain *ryanmen*, *kanchan*, or *penchan* waits become impossible or less likely.

For example, seeing a blockade of four 3s means that an opponent cannot hold 23 or 34 in that suit. Therefore, the *ryanmen* 1-4 and 2-5 waits are impossible. From this, the safety of 1 and 2 increases to *suji* level (**A** or **B** rank), while 4 and 5 gain half-*suji* safety (**C** rank), or full *suji* if there's an appropriate discard (7) or blockade (5 or 6) on the opposite side.

The blockade on 3 also implies that *kanchan* waits on 2 and 4 are impossible, but the safety increase from this deduction is much smaller than the *ryanmen* deduction. On their own, a blockade of 1 or 9 won't really affect the safety rank of any other tile and neither will a blockade of 2 or 8 appreciably shift the safety rank of 3 or 7, respectively.

Blockade tile:	1	2	3	4	5	6	7	8	9
<i>ryanmen</i> impossible:		1	1 2	2 3	3 7	7 8	8 9	9	
<i>ryanmen</i> reduced:		4	4 5	5 6	4 6	4 5	5 6	6	
<i>kanchan</i> impossible:	2	3	2 4	3 5	4 6	5 7	6 8	7	8
<i>penchan</i> impossible:	3	3						7	7

Observing three copies of a numeric tile provides a smaller safety boost to nearby tiles. If an opponent is to have a *ryanmen* or other wait using that tile, there will be only one remaining copy of that tile available, and it will need to be in that player's hand in order to make those waits. This dependency improves the safety of other tiles dependent on that "one chance" tile, though not to a *suji*-equivalent degree like a blockade (to **B-** or **C+** rank).

★ *Suji* traps

Discarding *suji* tiles aren't guaranteed to pass (other waits are possible), but one particular place where *suji* theory is less likely to work is in relation to the tile discarded to declare *riichi*. For example, if a 5 is discarded to declare *riichi*, its *suji* tiles, 2 and 8, have reduced safety capacity compared to normal (**C+** rank). The reason for this comes from the relatively common double-closed *ryankan* block pattern.



An incomplete *ryankan* block such as 135 has two ways to complete a sequence (2 or 4), a quality on par with a *ryanmen* block. However, this is a fragile property, since dropping one tile from the group also loses a wait. Due to this, *ryankan* groups are often kept intact as long as possible: either until they are completed, or when the hand reaches *tenpai*. In the latter case, one tile must be discarded from the group to form the final wait; for the example *ryankan* 135, discarding 1 leaves a winning wait on the (half-)*suji* 4, while discarding 5 leaves a wait on the *suji* 2. When that (typically latter) discard is also a *riichi* declaration tile, this sets up a standard *suji* trap.

Incidentally, since 1 and 9 cannot be used to complete a *kanchan*, a *suji* trap on those tiles is not really a factor when 4 or 6, respectively, is used for a *riichi* declaration. As another bonus point, when the *riichi* declaration tile is an honor tile, this tends to increase the strength of *suji*-based defense — usually, the declaring player will only have strong *ryanmen* shapes in hand to justify them keeping an inefficient but safe honor tile until they reach *tenpai*.

☆ Outside tile (*sotogawa*) safety

Speed and efficiency are major drivers of play, so we can use a player's early discards (their first five or six turns) to infer what parts of the space of possible hands that player is less interested in. Normally, players tend to discard the more difficult-to-use honors and terminals (1, 9) first, and keep more flexible inner-valued tiles (2 to 8). So when a player discards a more central tile early on, it suggests that player will also not be as interested in tiles that are numerically outside (*sotogawa*) of those tiles:

Discarded:	2	3	4	5	6	7	8
Safer non- <i>suji</i> :	1	1 2	2 3	3 7	7 8	8 9	9

Tiles that are *sotogawa* relative to discards made in the first row are actually about as safe as *suji* tiles (**A** or **B** rank). After the first row, safety gains from relative *sotogawa* tile judgement become much smaller (**B** or **B-** rank).

Note that for a discard of the middlemost tile, 5, outside tile safety **should not** be applied to 1469, since their respective *ryanmen* waits are still possible. *Sotogawa* safety reads should also be reduced relative to a *riichi* declaration tile made from mid-game or later, since it is more likely to have been pulled from a compound block related to the final wait (e.g. discarding 3 from a 233 group, waiting on 14). Finally, tiles discarded after a *riichi* declaration should be ignored in terms of relative *sotogawa* safety, since the *riichi* player cannot make any more choices in changing their hand or waits.

☆ Miscellaneous techniques

If you are folding with multiple types of absolutely safe tile in your hand, discard the ones that might become more dangerous against other players first. That way, you can have safer tiles in your hand in the case they decide to push forward and you end up with multiple players to defend against.

The risk level of discarding *dora* and its nearby tiles is always higher due to the value they provide. It's common to build one's hand in a way that it can accept and use *dora* tiles, even rejecting more efficient tiles or group shapes if the hand would otherwise not have much value or speed.

Additional Resources

Riichi Book 1 by Daina Chiba
Path of Houou (*blog*) by Amber

麻雀技術 守備の教科書 by 井出洋介, 小林剛
令和版 現代麻雀技術論 by ネマタ, 福地誠
「統計学」のマーじゃん戦術 by みーにん