

THE AGA RATING SYSTEM

The Most Commonly Asked Questions

by Bob High (may 1992)

The AGA has maintained a computerized rating system for many years. During 1988 and early 1989, the system was completely overhauled; a Ratings Commission was created, and the basic rating algorithm, the formula used to compute players' ratings, was redesigned by Paul Matthews, a professional statistician. Basic documentation of the rating system as it currently functions is available from the AGA (see Matthews' article, "Inside the AGA Rating System".) for details). This piece aims to answer some of the questions most commonly asked about the rating system.

The AGA rating system serves several purposes. It provides an objective measure of the relative strengths of competitive players. It allows individuals to track their recent performance relative to other players. And it allows tournament directors to more accurately seed players into large tournaments, rather than depending on "the luck of the draw", or on subjective judgements as to which players should or should not meet in the first few rounds.

Players naturally care about their ratings. Tournament go players are a competitive lot, and a certain amount of ego is wrapped up in one's rating, all protestations to the contrary notwithstanding. Players also tend to treat their rating as an index of their *rank*, or long term playing strength. While this is roughly true, rating and rank are actually two rather different things, and the AGA does not currently have officially recognized ranks. (See Question 4.)

The AGA rating system measures the *current, relative* playing strength of players in *numerical rating points*, with 100 rating points approximately equivalent to a one stone difference in playing strength. That is, a player with a rating 300 points higher than another and giving three stones should expect to win about 50% of his or her games with that player. (Since a "one stone handicap" -- i.e., black, no komi -- is well known not to be worth a full stone, the situation is actually a bit more complicated.

Each point of komi is worth about 10 rating points, so a one-stone handicap is worth about 50 rating points.)

It is essential to realize that the system measures only the *difference* in players' strengths. A player with a rating of -450 might "translate" this into a "rank" of 4-kyu. If he or she is used to playing in the local club as a 3-kyu, however, it would be wise to check the ratings of other local players before complaining about being "underrated". They are likely also to have ratings in the -500 to -400 range. Current experience (c. 1989) is that AGA members between the ranks of about 6 kyu and 3 dan tend to "overrate" themselves by a stone or so -- that is, they tend to claim a rank which would translate to a rating 100 or so rating points above where the system puts them.

The best way to see the significance, and consistency, of one's rating is to compare it to the ratings of other players one has met recently in rated play. The AGA rating system can produce on request individualized rating reports showing the ratings of all opponents met by a given player in recent rated play. One should expect that *on the average* one will have lost to players with higher ratings, and beaten those with lower ratings. The degree of correlation between rating difference and result is a measure of how well one's current rating actually reflects one's performance in recent rated play.

By and large these correlations are high, bearing out our expectations as to the meaning of the ratings. The rating system is also a *global* system -- it seeks that set of ratings which best explains recent rated play by *all* participating players. This is one reason why there may be less than perfect correlation between rating and results for individual players; one's opponents may have performed *better* against other players rated more highly, and/or *worse* against others rated lower, leading to apparent anomalies. This is only natural; we all expect (hope!) to win occasionally against stronger players, and to lose against those weaker than we are. To accurately reflect true playing strength, the rating system requires frequent data for many players (See Question 11).

Question 1: How do I get an AGA rating? How do I find out my current rating?"

To get an AGA rating you must: 1) be a member of the AGA, or of another national Go association; and 2) play some rated games, usually in a tournament. Current AGA ratings are printed regularly in *The American Go Journal*, which also carries a schedule of upcoming local tournaments. Individual ratings are included on all AGA mailing labels, and on your AGA membership card (although the rating shown on your membership card may not be the most current, if your membership is close to expiration.)

Question 2: How are handicap games handled by the rating system?

Handicap games play an important role in the rating system, as they help make the network of comparisons between players more complete. Our expectation that a player will win or lose against another player is based on the difference in their rated strengths *adjusted for any handicap given*. The adjustment is 50 points for a one stone handicap (black, no komi), $n \times 100$ for an n-stone handicap (n from 2 to 9). Research continues to refine "the value of a handicap stone".

Question 3: I play at my local club at 2 dan, but my rating is now only +146. Can I play in a tournament as a 2 dan? Will it help or hurt my rating to do so?

The AGA allows players to "play up" in official tournaments, though playing more than a rank above your current rating is discouraged, and the AGA reserves the right to limit the top band in major tournaments. Since rating points are assigned based on the expectation of winning at a given difference in rated strengths, there should be no significant difference in the effect on a player's rating. The choice is really whether a player wants to face a relatively easy field, and likely

end with a winning record, or a more challenging field, with the concomitant likelihood of a losing record. A player rated +197 who chose to play as a 2-dan might expect to win 2 out of 6 games; as a shodan he or she should win 4 out of 6 games. Either result would have a similar effect on that player's rating. In general, it's unwise to play in a band the average strength of which is more than 100 points above one's current rating. The player in question here, with a rating of +146, would do best to play at shodan.

The AGA does not allow sandbagging — the practice of playing *below* one's rated strength (presumably looking for easy wins, and/or tournament prizes). Even if sandbaggers win all their games, their ratings improve only slowly, so they do themselves no favor from the point of view of maximizing their ratings.

Losing to them won't hurt other players' ratings much, but it is disconcerting to run into "ringers", and it makes the competition for tournament prizes unfair. One of the practical uses of the rating system is to provide a "lower bound" on the rank at which players are allowed to enter tournaments.

Occasionally, a player feels that he or she has been "overrated", and wants to play below their rated strength, because they honestly feel they would only lose at their rated level. However, if too high, such players' ratings will rapidly adjust downward (within one or at most two tournaments) if in fact they lose most of their games. The grief suffered by such players is probably far outweighed by the benefits of preventing sandbagging.

Question 4: What is the relationship between my rating and my rank?

Your AGA rating is a measure of your *current* playing strength. It is based on recent rated play, and will reflect "ups" and "downs" in your performance. Rank is usually seen as a measure of long-term, even lifetime, achievement. Ranks are also used almost universally to determine the appropriate handicap in informal play.

The rating system is calibrated so as to translate *roughly* to an equivalent rank. Dan ratings are positive (from +100 up); kyu ratings are negative (from -100 down). There are no ratings between -100 and +100. Dividing by 100 thus gives a rough idea of the corresponding rank. This is meant *only* for informal comparison purposes, however. The AGA rating system is *not* an official ranking system. Ranking standards and procedures vary between clubs and among countries; a European dan-level player will generally be about a stone stronger than an American of the same rank, for example.

As of 1989, we have found that many players in the 6 kyu to 3 dan range tend to claim ranks a stone or more above what their ratings would suggest. Players above and below this range tend to claim ranks closely correlated with their official AGA ratings. This suggests that there may be a general *impatience to promote* near shodan level which is undetected in ordinary club play precisely because it is so widespread. It would also tend to suggest that many players should experience a "barrier" winning promotion from 3 to 4 dan, and indeed we have relatively few 4 dans.

Question 5: I've been a shodan now for two years, but my rating has never been above -150. Why does my AGA rating always lag behind my true strength?

True strength is in the eye of the beholder. As noted above, the AGA system is a *relative* rating system. It only claims to show the *relative* strengths of participating players. You may claim any rank you can legitimately defend in club or friendly play. Such ranks are neither mandated nor controlled by the AGA, nor are they required to correlate with a player's official AGA rating. Many players in the 6-kyu to 3-dan range have ratings below their claimed rank. If you hold your own against many shodans, but most of them have ratings between -199 and -100, then your -150 rating makes sense.

Question 6: How many games do I have to win to win a promotion?

Each time you win a rated game, you gain some number of rating points. The exact number of points gained depend mainly on the difference in rated strengths between you and your opponent. Beating a stronger player will win you more points; beating a weaker player gains you very little. All things being equal, beating a player of your own rated strength will gain you about 30 rating points -- so winning 3 or 4 games in a row (with no losses) would indicate a gain of around 100 points, or a one-stone "promotion". But beware: just because an opponent enters a tournament at the same rank as you do (2 kyu, or 4 dan) doesn't mean that his or her rating necessarily corresponds; some players choose to "play up": they enter at a rank above their current rating (see Question 3). Beating them won't gain you as much, though it can never hurt. Losing to them can hurt a lot!

Question 7: I regularly beat X in our friendly games, yet he is rated 50 points above "me. How can this be?

The rating system is only as good as the data it is given. It is based on *rated games*, which as of 1989 are 99% tournament games. Clubs are free to submit properly supervised non-tournament games, preferably in large batches, for inclusion in rating calculations. If you indeed regularly defeat X, submission of rated games between you will rapidly equalize your ratings. There are some players, however, who tend to perform much better in a tournament setting, while taking their friendly games less seriously. Perhaps your opponent X is one of them.

Question 8: I was 3 and 2 in my last tournament, yet my rating actually went down! What kind of a crazy system is that?

The amount you gain or lose in rating points from a given win or loss is determined mainly by the difference in current rated strengths between you and your opponent, adjusted for any handicap given. (See Question 6) As we have noted, some players tend to "play up" in tournaments, so some of the players you defeated may well have been quite a bit weaker than you, and your victories over them may not have helped your rating very much. It's also possible that some of the players you LOST to were actually rated below you, which could hurt your rating more than you realized. The net result could be a loss of rating points

even on a winning record. (The reverse can also occur, but players rarely complain about it!)

Question 9: I've beaten so-and-so twice in our last two tournaments, but she's still rated above me. Why?

The rating system uses a *global* algorithm -- it comes up with that set of ratings for all participating players which would most closely predict (or explain) the observed results. Your friend may have simply performed better against other players, or faced a stronger field than you did over the course of these and other tournaments included in the current rating update.

Question 10: I notice the AGA rating system regularly shows a handful of 7 dans and even an occasional 8 dan. How did American go players get so strong so fast?

A player's AGA rating is a measure of *recent performance*, not necessarily of long-term playing strength. This is one reason we discourage too close a correlation between ratings and ranks. Top players, many of whom only participate in one or two big tournaments each year, can temporarily lift their ratings into the *stratosphere* if they manage to win all their games once or twice. Frequently they will be brought back down to earth in the next tournament. On the other hand, if they can consistently win in even games against a range of other players who have won +600 ratings, it seems only natural to assign them ratings reflecting this fact. This accords with the observation, noted by many strong amateur players over the years, that the top (6-dan) "band" is "deeper" than one stone. Some of the players who have won ratings in the +700-800 range have actually had professional training at one time, so it should not surprise us that they show exceptional strength.

Question 11: How do games get rated?

Games from AGA sanctioned tournaments or club play can be sent to the Rating Coordinator c/o the AGA. (TDs should contact the AGA for the current Rating Coordinator's home address for more rapid reporting.) To be rated, games must be played according to AGA-approved rules, with time limits of at least 30 minutes per player and overtime of at least 20 stones in 5 minutes. Clocks need not be used if both players so agree. Both players must agree in advance of play that the games are to be reported, and both players must sign each game report. All games from a tournament, league, etc., must be reported, together, by the tournament director or club organizer, who thereby certifies that they were played under the above conditions.

Games must be reported in a standard format, preferably on IBM-PC compatible diskettes; the AGA provides software free of charge to tournament directors and/or club organizers for use in pairing and reporting tournaments. Alternatively, games may be reported on standard printed forms (sample attached).

Question 12: How are players assigned an initial rating?

We enter new players at the rating corresponding to the middle of the rank they claim -- +150 for a shodan, for example; -650 for a 6-kyu. Even one rated game is enough to get a rating, although a player's rating won't be very reliable until we have at least a handful of games, preferably at least a dozen, to work with. If a player's initial rating is inaccurate, it will adjust quite rapidly; after one or two tournaments a player's rating will rarely be off by more than 100 points, and will usually be more accurate than that.

Question 13: What exactly is my current rating based on? Who were my opponents, and what were their ratings? Which tournaments were included in my latest rating?

You can get an individual rating readout by sending a request and a SASE to the AGA. (TDs and club organizers should contact the AGA for the address of the person currently handling this task, for faster response.) That readout will list the results of all your games included in the most recent rating update. It will list all your opponents, and their ratings, along with the estimated likelihood of a player with your rating beating a player with your opponent's rating (after adjusting for any handicap). You will see that, in general, you beat players with lower ratings and lost to players with higher ratings.

Question 14: I have a lot of questions/criticisms/suggestions concerning the AGA rating system. Who do I direct them to? How do I find out more about how the system works?

The AGA rating system is administered by the AGA Rating Coordinator and a Rating Commission. You can write the Commission c/o the AGA, P.O. Box 397, Old Chelsea Station, New York, NY 10113. They will be happy to send you the most recent documentation and comments on the system, and/or a recent rating report on all rated AGA members. The Commission is responsible for overseeing the integrity and efficiency of the system, and welcomes suggestions and offers of assistance.