Proposed ELO rating for PUGs

RedFox

June 5, 2013

Scoring

	Winner	Loser
3 maps	0.6	0.4
2 maps	0.75	0.25
1 map	1.0	0.0

Expected score

A teams rating is the average rating of its players: $R_a = \langle \vec{r_a} \rangle$, $R_b = \langle \vec{r_b} \rangle$ A difference of 200 rating points would mean that the stronger team has an expected score of approximately 0.75. The expected scores (using the logistic curve):

$$E_a = \frac{1}{1 + 10^{(R_b - R_a)/400}}$$

$$E_b = \frac{1}{1 + 10^{(R_a - R_b)/400}}$$

New rating

With the actual scores (S_a, S_b) and the k values of the players in each team ($\vec{k_a}$, $\vec{k_b}$) the updated ratings are

$$\vec{r_a}' = \vec{r_a} + \vec{k_a}\,(S_a - E_a)$$

$$\vec{r_b}' = \vec{r_b} + \vec{k_b}\,(S_b - E_b)$$

K-factor

Rating	K-factor
<2100	32
2100-2400	24
>2400	16