

## Half-life-for-a-tie

25/4-2012 – Henning Forbech

Phil Cartier has sent a proposal for a new rule to the F2D Work group. This document is an analysis of the proposal and my personal view on some of the issues in the e-mail. Other members of the work group may have different views on the proposal and this document only represents my personal view on the proposal.

Here is a copy of Phil's e-mail to the F2D Work group:

*I am not sure where to go with this, but if I try and submit it through the normal rules change process it will get absolutely no where.*

*I noticed that in the efforts to reduce noise there was no mention of the number of matches re-flown because they end in a tie. Two or three re-flights in an early round are common. I've seen two pilots fly as many as 3 times in one round and have heard of contests where two pilots flew as many as 5 re-flights.*

*Since the current scoring system is a knockout tournament the whole idea behind each match is that one pilot wins and advances and the other pilot loses and depending on the number of lives allowed (2 or sometimes 3) the losing pilot is out of the contest. Since in a tie match neither pilot scored a win it seems very unreasonable to have them fly again and again until one scores a clear win. Flying several matches to score one win is a much poorer performance than flying once to score a win and should not be treated as equivalent.*

*The simplest correction is to simply list the match as a tie. If a pilot accumulates 2 ties that is treated as a loss. This would eliminate a significant number of matches in most contests, reducing the amount of noise.*

*There are many ways to reduce the number of ties by other changes to the rules but all of them would make judging more complicated or put pilots who do not have a consistent team at a big disadvantage.*

*One final note: do you realize that 4.4.9.1 requires the pilot to leave the flying circle, go outside the pitting circle and come back in to the handle of the spare plane, unless the spare handle is within an arm's reach when his first plane hits? All movement around the circle, such as walking around the pilots circle a couple of meters to get the spare handle is forbidden.*

*Thanks for your consideration, and thank you for all the work you put in trying to improve the F2D rules.*

*Phil Cartier*

I understand from the proposal that reflights are seen as a delay in a competition and as something that should be minimized. But it is not so. Reflights are just a way to handle ties. Combat is a knock-out tournament but sometimes a flight end in a tie after the first 4 minutes.

The reflight is the continuation of an unfinished match and a way to get a result from the match. By doing this there will be a winner and a loser in every match.

*Multiple reflays are also unfair to the rest of the pilots, since they don't get second chances plus it seriously delays the contest.*

Pilots do not see it as unfair that other pilots get a reflight due to a tie. A reflight is not a second chance. Sometimes pilots actually see it more as a penalty for not winning in the first flight! Pilots do not try to get reflights just to get more flights at a competition. No pilot have ever made e.g. an early landing to change a sure win into a reflight just to get some extra air time. At competitions pilots want to win, not to maximize the number of flights.

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The core of the proposal is to reduce reflights by handling a tie as losing half a life.

First we will try to see how this “half-life-for-a-tie” rule will affect the total number of flights in a competition where the pilots do not adopt their strategy to this rule. Just imagine the pilots were flipping coins instead of flying combat.

I have made a spread sheet with a theoretical competition under this rule. All pilots start with 2 lives and for all lost matches a pilot will lose a life. In a tie both pilots will lose half a life. The spreadsheet can be downloaded here: <http://www.f2d.dk/rules/docs/Tie-reflights.xls>

The number of reflights in competition is around 15%. Some of the reflights are caused by errors by the officials or technical issues but probably 12% of the flights end in a tie. More info here: <http://www.f2d.dk/tactics/statistics.htm>

If 12% of the matches end in a tie then 12% of the pilots will have 1½ life after the first round. 44% will have 2 life and 44 % will have 1 life. The same calculations can be made for the next rounds. For each round some pilots will lose all lives and have to leave the competition. The number of pilots left in the competitions and the number of flights in each round can be calculated as a percentage of total numbers of pilots. After 12 rounds less than 0.08% of the pilots will still be in the competition. By summarizing the number of flights from all rounds we can see how many flights a competition would have generated under these new rules.

If every flight results in one pilot winning and the other pilot losing (Classic F2D with no reflights) a competition with 100 pilots would result in 200 flights (yes, I know the winner will survive with one or two lives and the number should only be 199 or 198 but if you have a fly-off for 2<sup>nd</sup> or 3<sup>rd</sup> the number of flights will still be close to the double of the number of pilots).

With 12% reflights the “half-life-for-a-tie” rule will result in 213.5 flights and a competition under the current rules will result in 224 flights. The reduction in the total number of flights (or reduction in noise load) will only be 4.7%.

For a typical competition with 38 pilots the reduction will only amount to 4 flights. In the spreadsheet the percentage can be replaced by the number of pilots to get the actual number of flights.

The “half-life-for-a-tie” rule will not result in the same number of flights as classic F2D with no reflight (twice the number of pilots) because a lot of pilots with half a life will lose their bout and leave the competition with “minus half a life”. The total number of lives in the competition will be more than twice the number of pilots.

In this first part of this analysis pilots were not adjusting their tactics to the rule. Now we will see how pilots will adapt their tactic to this rules and what influence this will have on the number of flights.

When two pilots of equal strength with one life or more meet in a match they will have little interest in fighting for a win. The chance of losing is too high. It will be better for them to make it a tie and only loose half a life. By losing only half a life they will stay in the competition and have a chance of winning in the next match. Only pilots with half a life will have to fight hard to stay in the competition.

When a strong pilot meets a weak pilot (e.g. a beginner) the strong pilot will go for a win. This fight will be less dangerous for him than a fight with a pilot of equal strength. The result will be that pilots will try hard to kill weak pilots but will go for a tie when flying equal pilots.

If pilots managed to get a tie instead of a win/lose result the total number of flights will increase. With just a few extra ties the total number of flights will be higher than what we have with the current rules.

This rule was thought out to reduce the number of flights but it will actually increase the number of flights. It will not reduce but increase the noise load. The “half-life-for-a-tie” rule will also have some unwanted side effects on combat. Beginners will be bullied out of competitions and pilots will be accused for fixing matches to get a tie.

Sorry, but I do not see “half-life-for-a-tie” as a way to go for combat in the future.

*There are many ways to reduce the number of ties by other changes to the rules but all of them would make judging more complicated or put pilots who do not have a consistent team at a big disadvantage.*

I agree. The point is that a Combat match should be decided by the pilots’ ability to fly their models and make cuts on their opponent’s streamer. Not by how fast mechanics can start the engine or how fast the pitmen can run between models on the ground.

/Henning Forbech