

ADDENDUM A: RACECOURSE PERSONNEL AND THEIR DUTIES (Derived from the AMA document of the same name) Version 2007-2016

The material presented here is intended to “flesh out” the bare bones of the rules in a way that is helpful and readable. New CDs and racecourse workers should look here first for answers to frequently asked questions about how to conduct an RC Pylon race.

Please note, the suggestions contained in this addendum are not “rules,” however, experience has shown that following these suggestions greatly improves the odds of conducting a race that complies with the rules and that contestants will consider fair and enjoyable.

Additional information, as well as illustrative diagrams and photographs of racecourse equipment, may be found in the NMPRA’s *Pylon Racing Procedure Guide*. Contact AMA Headquarters for information about how to obtain a copy.

1: Personnel Overview.

1.1: Three Pylon: In addition to the CD, the personnel required to fully staff a three-ylon race at which four-plane heats will be flown consist of the following:

Starter

Assistant starter

Four timers/lap counters

Four pylon #1 flaggers

Pylon #1 chief judge

Pylon #2 cut judge

Pylon #3 cut judge

Pit boss

Scorekeeper

Fueling station supervisor

Transmitter impound supervisor

This brings the total to 17. Some of these positions can be combined if necessary. For example, an experienced starter may be able to get along without an assistant. The scorekeeper can double as pit boss. Fuel and transmitter impound functions can be combined so long as strict attention is paid to ensuring that all transmitters brought to the impound are turned off.

At smaller meets, the crew can be further reduced by one timer/lap counter and one pylon #1 flagger if the aircraft are flown in three-plane heats rather than four-plane heats.

1.2: Two Pylon:

1.2.1: To normally staff four plane heats:

Starter.

Four lap counter/timers.

One pylon #1 cut judge.

One pylon #2 cut judge.

Score-keeping official.

This totals 8 individuals.

For small events, the pilots from the previous heat can be the lap counters/timers and the score-keeping official can be the starter. That totals 3 officials and at least 8 pilots.

1.2.2: Also, three plane heats would require a minimum of 3 officials and 6 pilots.

Additional club members volunteering to be lap

counters/timers will allow a race with less than 6 pilots participating.

2. Starter and Assistant Starter. The starter’s primary duties are to signal the start and finish of each heat, coordinate the efforts of the other racecourse workers, and transmit the scores and times from each heat to the assistant starter or scorekeeper.

The starter should be equipped with the following:

(a) A clipboard containing heat result sheets, in sequential order, with the pilots’ names filled in and blanks for each pilot’s finish position, number of cuts, official time, and points earned for the heat;

(b) A signal flag, preferably one bearing the classic black-and-white checkerboard pattern; and

(c) A walkie-talkie or headset radio.

(d) A bullhorn to repeat the cut information, so the Cut judges know it was received, and the pilots know it occurred.

Other helpful accessories are some numbered dice or cards for random assignment of aircraft to starting lane positions, and a large starting clock with a clearly visible sweep hand. The assistant starter’s primary duties are to help the starter deal with the paraphernalia listed above (chiefly the clipboard) and to act as a second set of eyes and ears for the starter in case of a close finish or other complication.

The starter and the CD should not be the same person, so the CD can act as an impartial arbiter if questions arise concerning operation of the race.

The starter should stand ahead and to the left of the starting line, as viewed from the pilots standing area facing pylon #1. Before each heat, the starter should direct the pilots or callers to hold up the aircraft one by one, so that all the racecourse workers can clearly see and identify them. If wing tags are not used, the starter should then broadcast (via walkie-talkie or bullhorn) a unique identifying number or color for each aircraft.

After identifying the aircraft, the starter should remind the pilots to make sure their transmitters and receivers are turned on and functioning properly. It is a good idea to ask to see a “wiggle” of confirmation from one of the control surfaces on each aircraft. After that, the starter announces, “You’re on the clock,” and the starting procedure for that heat is ready to begin.

If one or more pilots have trouble starting their engines, the starter should not delay the launch signal. To do so would unfairly penalize those who got running promptly by allowing their engines to overheat. However, even if the pilots in the first of two groups in a staggered start (see paragraph 13.1.9.) are unable to go, the pilots in the second group still must wait for the second launch signal.

A good way to signal the two groups for a staggered start is to press the tip of the starting flag against the ground as the starting clock winds down, then abruptly raise the flag for the first launch signal. This prevents any chance of flinching ahead of time, and makes it easy to immediately drop the flag downward for the second launch signal.

During the heat, the starter and assistant starter should keep track of the lead aircraft and remain apprised of any cuts via walkie-talkie. The starter should strive to inform the pilots and callers, using the bullhorn, of any cuts as they are called by the cut judges. However, the fact that a pilot did not hear this

information right away is not grounds for a refly.

The starter should call "up and out" to any pilot who appears to have double-cut or who is otherwise disqualified.

At the finish, the starter should wave the checkered flag for the aircraft in the order in which they complete their required number of laps. Then the starter and assistant starter should double-check via walkie-talkie with the timers/lap counters individually for each pilot's finish position, elapsed time, and cuts (if any), fill out the heat result sheet, and send it in to the scorekeeper with the winner of the heat.

Note that it is possible for a pilot who has already cut once to cut again on the 11th lap. This counts as a double-cut and results in a score of zero points even though the pilot received the checkered flag.

In the case of a "photo finish," the starter and assistant starter must determine the order of finish. Stopwatch times should not be used as a tiebreaker because manually operated stopwatches are not precise enough for this purpose.

Any disputes concerning the order of finish, times, cuts, etc., should be resolved promptly at the conclusion of the heat. If a pilot believes that a mistake in lap counting or calling of cuts has affected the order of finish, the order of finish can be changed only if the timer/lap counter or other racecourse officials involved freely admits making a mistake or if all the pilots in the heat agree on a different order of finish.

3. Timers/Lap Counters. The job of each timer/lap counter is to follow one aircraft, to the exclusion of all others, for the duration of the heat and to accurately record the laps completed and the elapsed time for that one aircraft. Ideally, the timer/lap counter's eyes should never leave his or her assigned aircraft between the time it is held up on the starting line for identification and the time the starter gives it the checkered flag at the end of the heat.

Standard equipment for the timer/lap counter consists of a stopwatch and a hand-held clicker or similar device for counting laps. At least one of the timers/lap counters should also be provided with a walkie-talkie, headset radio, or other means of communicating with the starter on the racecourse. Alternatively, a graphic display visible to the pilots, callers, and starter and actuated from the sideline may be used.

All of the timers/lap counters should start their stopwatches at the first launch signal from the starter. This is a reference from which all elapsed times are measured.

Each timer/lap counter should record a lap completed each time his or her assigned aircraft crosses the start/finish line. If the pilot of the aircraft is called for a cut and the cut information is relayed to the timer/lap counter, the timer/lap counter should make a mental note that the pilot will not be finished after 10 laps, but must go 11 laps to complete the heat.

On the pilot's last lap, the timer/lap counter should watch for the aircraft to cross the start/finish line and stop the stopwatch at the instant it does so.

If the stopwatches are capable of a "split" function, it is a good idea to get both a 10-lap and 11-lap time for each aircraft, just in case the pilot should cut on the 10th lap and need to make one more to complete the heat. (Experienced pilots will often make an 11th lap whether they need to or not, just for this reason.)

4. Pylon-Cut Judges.

4.1: General:

Cut judges are stationed a minimum of 175 feet from the pylon line and 25 feet behind the pylon positions, in accordance with the AMA 540-B document, looking directly out (i.e., perpendicular to the pylon line) toward the pylons. When the aircraft are held up for identification before the beginning of the heat, the cut judge should report by walkie talkie the identifying word(s) previously assigned by the starter.

As viewed from the sideline, it is physically impossible for an aircraft to go the required distance to the pylons and also to cut inside the pylons on the same turn.

A turn is legitimate (i.e., there is no cut) if any part of the aircraft goes past the pylon. If there is any doubt about a possible cut, the pilot should be given the benefit of the doubt.

If there is a cut, the Cut Judge reports it to the Starter by walkie-talkie, saying "Low green, Low green", "High red, High red" or if there are a small number of participants and the "Lane Matrix" is not used, the agreed-upon name for the airplane that cut "Yellow, Yellow", Patriotic, Patriotic" or "Gee Bee, Gee Bee". In the case of Warbird Style cut reporting, the cut judge may simply put a check mark next to the appropriate aircraft lane or color on his/her notebook or dry-erase board, then report the total number of cuts recorded for each aircraft at the end of the heat.

4.2.1: If there is one cut judge at each pylon: Equipment for AMA style scoring is a walkie-talkie to report cuts. For Warbird style scoring, a pad to record cuts will do.

4.2.1: If there are flaggers for each plane: Like the timers/lap counters, the flaggers each watch one aircraft, to the exclusion of all others, for the duration of the heat. The primary function of each flagger is to signal the pilot when his/her aircraft has gone the required distance to *the* pylon and therefore can turn without cutting. The secondary job of each flagger /cut judge is to notify the Starter and lap counters if the aircraft turns before getting to the pylon. The flaggers' standard equipment consists of **(a)** a color-coded signal light, shutter, or flag with which to signal a turn, and **(b)** some form of "cut" indicator with which to signal a cut. The flagger must choose between these two types of signals every time a signal is given. The "turn" and "cut" signals are mutually exclusive.

When the aircraft are held up for identification before the beginning of the heat, the flagger for each lane should flash or waggle the turn signal device to indicate recognition of his/her assigned aircraft.

After launch, and after the aircraft crosses the start/finish line on each succeeding lap, the flagger should do as follows: If the signal device is a flag, hold the flag aloft so that it is clearly visible as the aircraft approaches, then drop it smartly the instant the aircraft intersects the imaginary plane established between the pylon and the flagger's . If the signal

device is a shutter or light, activate it crisply at that same instant and hold it in the open or “on” position for one or two full seconds at least, so the pilot and caller are sure to see it—but not much longer than that, to avoid confusing the other pilots.

As viewed from the sideline, it is physically impossible for an aircraft to go the required distance to the pylons and also to cut inside the pylons on the same turn. Therefore, if you have signaled the pilot that he/she has gone the distance, you should not call a cut. Also, resist the temptation to “help” the pilot by signaling too soon. This will just mislead the pilot into thinking the racecourse is shorter than it actually is, and possibly cause the pilot to cut on the next lap. The pilot is relying on you to be precise, consistent, and impartial. A turn is legitimate (i.e., there is no cut) if any part of the aircraft goes past the pylon. If there is any doubt about a possible cut, the pilot should be given the benefit of the doubt.

5. Three pole, with multiple cut judges -Pylon #1

Chief Judge. The pylon #1 chief judge is stationed with the pylon #1 flaggers and should be equipped with a walkie-talkie or headset. The chief judge communicates aircraft identification information to the flaggers at the beginning of each heat, confirms any cuts called by the flaggers, and relays cut information to the starter. Other than the starter, the pylon #1 chief judge should be the most experienced worker on the racecourse.

6. Other pylons (Section 4.1 General applies.)

6.1: Pylon #2 and #3 Cut Judges. The primary job of the pylon #2 and #3 cut judges is to watch all of the aircraft in each heat and relay cut information to the starter. Standard equipment for the cut judges includes a chair and sunshade, a walkie-talkie or headset, and a note pad or dry-erase board on which to jot color schemes and other aircraft identification information for each heat.

The #2 and #3 cut judges should be positioned on the sideline, looking out toward their respective pylons at an angle sufficient to see whether the aircraft are cutting (see racecourse diagram in AMA rules).

Each of the cut judges may also be equipped with an ordinary transmitter antenna, fishing rod, or thin dowel mounted vertically on a stand or stake in front of his/her chair to help judge whether the aircraft are staying outside of the imaginary vertical line extending above the pylon, and/or an air horn to “toot” as an offending aircraft passes the pylon.

7. Pit Boss, if needed. The pit boss calls up the pilots by heats to fuel and place their aircraft in the ready area. A public address system or bullhorn is helpful in this task. Both the pit boss and the scorekeeper, if possible, should be equipped with walkie-talkies to communicate with the starter. In addition, one of them should have an air horn to sound in case of a sideline cut.

The pit boss may be the same person who conducted safety inspection at registration. (See 8. Preflight Inspection of Aircraft.)

8. Scorekeeper. The scorekeeper collects heat results from the starter and records scores on a master list or

scoreboard as the contest progresses. This may be done manually or, if suitable computer equipment and power supply are available, scorekeeping may be done via computer using any of several commercially available matrix programs.

The scorekeeper may be the same person who set up the heat matrix at registration. (See 14, Heat Matrix, and 15, Scoring.)

The scorekeeper should take care to differentiate a pilot’s place in the heat (that is, his or her finish position) from the points awarded for that place. The two numbers are usually the reverse of each other: a pilot who finishes first will have a “1” under “Place” on the heat card, but a “4” under “Points.”

On the other hand, a pilot who finishes 4th (last) in the heat will have a “1” under “Points.” (If three-plane heats are being flown, the numbers to watch out for are “3” and “1.”) To reiterate: a better finish results in more points, not fewer.

9. Fueling Station Supervisor, if needed. This person runs the fueling table. He or she should ensure that each pilot who brings an aircraft to the ready area drains it of fuel, then refuels it from the common supply. After fueling, the aircraft should be placed in the ready area and not taken back to the pits.

The fueling station supervisor should be equipped with an accurate scale for weighing-in of aircraft that are returning to the pit area after flying a heat. Usually the heat winner (who may also be carrying the completed heat result sheet for the scorekeeper) will need to stop at the scale to verify that his/her aircraft is at or above the minimum allowable weight. The fueling station supervisor can supervise the weighing-in operation as well.

10. Transmitter Impound Supervisor if needed. This person should be provided with a large rack or folding table, protected from the sun and rain, on which to collect and safeguard the contestants’ transmitters. Transmitters should only be given to pilots who are on their way to the ready area, and should be checked when brought in after each heat to ensure that they are not left on.

The transmitter impound supervisor may also be one of the people who helped with registration, inspection, or setting up the matrix

11. When first beginning having races, the Starter and the Lap Counters can be other pilots. In that case, the only non-flying volunteer workers are the two Cut Judges. The Scorekeeper may also be a pilot.