

The Armagetron Beginner's Manual
v0.2

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For Jenny

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Chapter 1

Basic Gameplay

Greetings, Program! In this manual I am going to help you improve your lightcycle driving skills, specifically in the game of Armagetron Advanced. This manual is intended primarily as a training manual for newbies who want to learn the basics and improve their game so they can compete with stronger players. This is not a comprehensive manual by any means! I am always learning new tactics to use myself, so I would not be qualified to write one anyway, but I hope that all you newer players out there can learn from this manual and maybe even some stronger players can pick up a pointer or two.

Now, before I continue, I believe the most important thing to remember whenever you play lightcycles (or any game for that matter) is that it is a game. Games are about having fun. Competition is only a secondary goal. There is absolutely nothing wrong with winning, otherwise I wouldn't be writing this. There is also nothing wrong with being competitive. What you must be careful of though, is being over-competitive. It will only frustrate you in the end. Be courteous and polite in everything that you say online, and PLEASE don't accuse people of cheating just because they are winning (there is only one known way of cheating and it requires some game client reprogramming and enabling a certain server setting). I have experienced all of these undesirables which are very annoying and detract from spirit of the game.

That aside, lets get started. The game of Armagetron is adapted from the light-cycle game shown in the 1982 computer sci-fi movie TRON. If you are a computer geek this is a must-see, and even if you aren't I would still highly recommend it. Each round starts with all the players positioned around the edge of an arena. At the start of a game, your cycle begins moving which leaves a trail behind it (aka "jet wall" in the movie). On *ahem* most game servers, turning is only in 90-degree increments, but this is not the case on all servers. The closer you get to the cycle walls, the faster you begin to accelerate. The objective is to force everyone else to crash and to not crash yourself. Simple enough, but quite hard to master.

In this game, as in any game, patterns will invariably develop which can be studied to gain tactics and strategies which will help you win the game. If this is starting to sound a bit like a book on chess, well, that's because I play chess. Lightcycles and chess can be similarly analyzed to learn new tactics which I hope to teach you in this manual. Lets get started talking about some of the basic gameplay elements.

1.1 Rubber

The first monkey wrench to throw into the game is a feature called rubber. Rubber is basically defined as the level of niceness when you hit a wall. With rubber, your cycle does not explode immediately when you hit the wall, but after a short delay. The higher the rubber, the longer the delay.

Rubber was developed to help combat the problem of lag in the online multiplayer games, but has since found expanded uses— namely giving players the ability to pull off maneuvers that would have never been otherwise possible. Some people like to play on servers with tons of rubber, others like to play with almost none... it's all a matter of preference. Personally, I prefer the middle-of-the-road approach. My rubber preference is between 5 and 20. 30 is OK, but too much rubber kills gameplay in my opinion, but I try to play on all servers to become a well-rounded player.

The rubber strategies you have available will depend on the amount of rubber the server has. On low-rubber servers, the applications are obviously limited. You must be very careful when using the rubber on these servers, because often times you will needlessly kill yourself. Low-rubber servers are usually designed to promote maneuvering skill, so this probably isn't the place to see how long you can hit the wall before exploding.

1.1.1 Adjusting

Ok, enough redundancy... Let's talk about what you can do with this rubber thing. Rubber gives you a new ability to try out: the adjust. Say you are traveling relatively close to a wall, but you want to grind the wall (get really close to it) to build up more speed. If the wall is on your right, you would first turn right, then left very quickly so that you adjust your position to be closer to the wall, building up more acceleration and speed.

You must be very careful with this maneuver on a low-rubber server as it is harder and you risk needlessly killing yourself. On a medium rubber server though, you can time your turns farther apart to get closer to the wall, which allows you to gain more acceleration since acceleration is dependent on your distance from the wall.

1.1.2 Sealing

Now, thinking about the adjust, you may have already thought of the next use for rubber—the seal. Sealing is when you seal an opponent into a small area that is very hard to get out of. This is one of the easiest methods of eliminating someone. There are several ways to seal someone. One would be to get enough speed so surround your opponent, then you could make the box and adjust into the wall, using up almost all of your rubber. That is probably the most basic method of sealing. Unfortunately though, you will soon find out that this will not stop many skilled opponents who can use the brakes and rubber effectively. You will need to learn a stronger seal.

Before you can learn this seal though, you must learn the art of double-binding. Double-binding is binding 2 keys to the same action. For example, on my keyboard I have the left arrow key which is set to turn... you guessed it: LEFT! I also have the 'z' key on my keyboard which is also set to turn left. Why? Because many (if not most) servers will let you turn much faster this way since by hitting both keys at the same time, you send the signals to turn much faster than by hitting one key twice.

Now that you have 2 keys bound to each of your turns, you can execute a 180. Now you can use this as a seal. First, once you have boxed an opponent, you adjust into the wall to make a basic seal and complete the box. Next, you do a 180 in the direction of the wall. Now, do another 180, still in the direction of the wall. THESE SHOULD NOT BE THE SAME 2 KEYS YOU HIT LAST TIME!!! (unless of course you deny the laws of physics :D). Lets imagine again that our wall is to our right again. After adjusting into the wall, I would first do a 180 by hitting both keys bound to "right" (in the direction of the wall), and then do another 180 by hitting both keys bound to "left" (still in the direction of the wall, remembering that we did a 180). This gets us closer to the wall, and therefore closer to making a true seal. Depending on the amount of rubber you have, you may be able to do this many times, each time brings you slightly closer to the wall.

This seal works fine and dandy on low-rubber servers or against easy opponents, but most players will be able to easily bypass this seal. Let's discuss a better approach. The idea is to deplete as much rubber as possible, leaving as little room as is possible for your opponent to escape through. There are 3 basic ways to do this. The first, which is the most effective if done properly, is the timed method. You basically drive up to the wall you want to seal and after a timed delay which you keep track of mentally, you turn. The obvious downside to this is that you must be familiar with the server's rubber settings, but this really isn't that hard once you have some experience. The second and most common method is the brake method. Drive up to the wall you are going to seal and right before you hit it then apply the brakes. On most servers the rubber depletion rate is affected by speed so you brake while hitting the wall and then carefully watch the rubber meter. Once it is almost

gone you make your turn. The final method, commonly used by high rubber players is to drive up to the wall and rapidly make a series of turns which will slow down rubber depletion, similar to the way brakes would, but not as drastically.

In spite of these tactics, there is really no such thing as a "true seal". It is basically impossible to make a "true seal" because (at this stage of the game's development) the cycle radius is 0, which means that the cycle is basically a microscopic dot for the purposes of collision detection. This allows the cycle to get through almost any gap between walls, no matter how small provided that the person can pull the maneuver without crashing. Your objective therefore is to make the gap small enough that the chances of escape are as close to zero as possible.

1.2 Speed

I cannot stress the importance of speed enough!! If you cannot build up speed fast enough, you almost certainly will die. The player who is able to use speed most effectively will almost always emerge the champion.

1.2.1 The Launcher

One simple way to build up speed is by constructing a trail pattern that I call "The Launcher". I'm not exactly sure if this maneuver has a name or not (I seem to remember seeing it called the slingshot by someone...), but I'm going to call it the launcher until I hear otherwise :D...

The basic maneuver goes like this. First, you head straight in one direction for a little bit- the longer you make it, the faster you will come out. Once you have gone far enough, do a 180 and follow your trail back almost to the end. Next, do a 180 into your last wall like you are going to box yourself. Then do a 180 towards the wall you are grinding now which will take you out of your box and shoot you out a lot faster then you went in. Note that this will shoot you in the opposite direction of your first turn, so you could either turn the direction opposite your desired final orientation, or you could throw in another 180 outward before you do the inward 180. It sounds kindof confusing when I write it out, but it is really easy once you get the hang of it. (By the way, don't even try this if rubber is less than 6). This is what a completed launcher looks like.

You can make many variations on this as well, like grinding the launcher wall multiple times to build up more speed, or you can make a very short launcher to help escape an enemy that is faster than you. Another technique that many speed players favor is to start off a round by going about halfway to the center of the arena and constructing a launcher to build up speed for the initial clash. You will see launcher-like trails all over the grid and you should learn to incorporate these techniques into your game effectively.

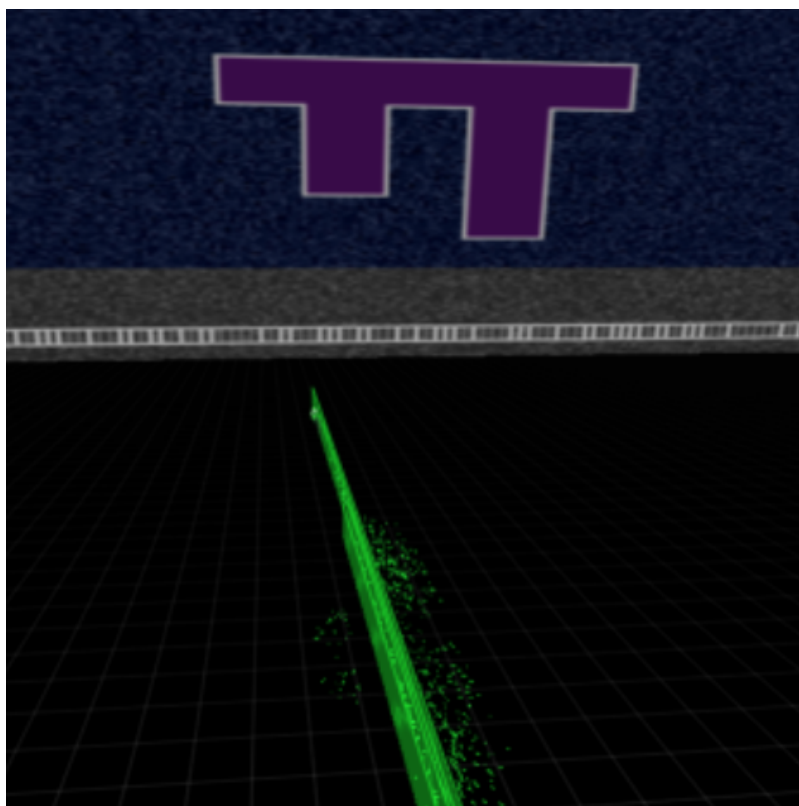


Figure 1.1: A Completed Launcher

1.2.2 Handling the Speed

With all this new speed comes an added challenge since the amount of time you have to react is significantly reduced, and on many servers your rubber depletes faster when you are going fast. You must be very careful especially when grinding others walls and be wary of traps. For instance, if you are not careful, you may shoot straight in to a narrowly constructed launcher and by the time you realize what happened, you'll most likely be dead. In short, the best advice I can give you is to be careful. It might not sound like the killer strategy you have been hoping for, but it works. I probably lose almost half of my matches because of carelessness, so being careful, but aggressive at the same time is a delicate balance you must achieve if you want to win.

1.3 Lag

Another aspect of the game that we must all deal with is lag. Lag is another term for network latency or delay. As with any other network traffic, the positional information that your computer sends to the server experiences a small delay and that is what we call lag.

Lag is mostly dependent on 3 things. 1) The speed of your internet connection, 2) The speed of the server's internet connection, and 3) The speed of the other players' connections. It is also somewhat dependent on the speed of the computers involved. For example, if the server is under high load, or if one of the players is doing some heavy processing or has a slow computer then some lag will result. Some of the time, if network conditions are good, you will not experience much lag at all, but other times you can experience up to a second of lag. If you have a dial-up connection, you will find this out very fast.

1.3.1 The Lag Equation

Ok, now that we know what lag is and how it affects us, I am going to show you how to find out how much lag we will experience. First let's talk about how we measure lag. Lag is measured in milliseconds. $1000 \text{ ms} = 1 \text{ second}$ of lag, $100 \text{ ms} = .1 \text{ sec}$ of lag and so on. You can find out how much lag is between you and the server by looking in the lower-right corner of your screen where it is displayed as ping. Ping is how long it takes for a packet to get from you to the server and vice versa. Ping is basically a way of measuring lag and the units are in milliseconds. Therefore if you have a ping of 100 then it would take a packet one-tenth of a second to reach the server you are pinging (in this case that would be the server you are playing on).

Now that we know how much lag is between us and the server, we have half of the information we need. We must now see how much lag is between us and another player. When we are playing the game we can conveniently hit the tab key

and it will show us a list of the players in the game, their score, and finally their ping. So, we can just add up our ping + their ping and we have the amount of lag we will experience with that player. We could do this for any player to figure out the amount of lag between us and them. You obviously dont have to do all this math each time you join a game, but Im just telling you how to do it so you can at a glance see if you need to watch out for any players with a high ping. If you or another player has a ping over 300, you should be very careful. The trick is not to play too aggressively. If you play very aggressively and try to narrowly cut them off, you will die frequently because there is so much time in which he could have turned in front of you but you would not see it. You will frequently see high-lag players teleport or die instantly without warning. The idea is for you to stay far enough from them so that you dont end up being killed instantly by them. Such a kill is referred to as a lag kill.

In addition to looking at pings, you have another nice feature at your disposal to help you deal with lag. You will notice in a multiplayer game that each player has this odd shape that moves around with them. I am not sure if there is a name for it, but as far as I can tell, it is used for measuring lag. I believe that that shape is the area in which they could teleport due to lag, and the area in which you could be killed. Notice that it gets bigger as you go faster, and smaller when you slow down since the faster you go, the more potential there is for lag to interfere. As I said, I am not 100% sure this is the purpose of that shape, but even if it isnt then it sure is useful for calculating lag. Someone please correct me if I am wrong on this though.

In the end, there isnt a whole lot we can do about lag. No matter how fast your internet connection is, you will always be limited by the systems on the other end of the line. Its a fact of life and well all have to get used to it. So, until the internet is lag-free, (which wont be any time soon) be careful, especially with high-lag players. I have been killed countless times by over-aggressiveness. Backing o? a bit cant hurt as long as you maintain a positional and/or speed advantage.

1.3.2 Lag Training

I have a theory. Actually, I have lots of theories, but here is an interesting theory that I have devised to make you a better armagetron player. The idea is to purposefully create bad playing conditions by using large amounts of network bandwidth or by stressing your CPU so the result is bad, choppy, laggy playing. The reasoning behind this is that if you can learn to play well (or even OK) in these conditions, that you will be able to play even better in good conditions. Playing under bad conditions will also help you react faster. If you play under bad conditions, where slow reactions mean sudden death, then I believe you will end up with a lower reaction time. I observed this phenomena at work while training a dial-up player. After a few months I had him over to my house for a LAN party which we played

using my cable connection. His performance was absolutely phenomenal— hence my idea of lag training was born.

If you want to try this yourself and you are looking for ideas, running a (legal) bittorrent download is a great start. I accidentally left azureus running the other day with 3 torrents and started playing armagetron and my ping had risen from its usual 84 to about 340 on my server (which is about 5 miles from my house :D). A word of caution: check with the other players before you do this! Most players don't particularly like having high-ping players messing up their game so do this on a low-traffic server with some friends or something to avoid needlessly making some enemies.

1.3.3 Camping

In your time on the grid, you have probably heard someone call another player a camper. Maybe you have been labeled as a camper. So, what is camping anyway? Say, for example that you are in a box. No way out, but there is just enough rubber that you can hit a wall, turn, hit the next wall, and keep on turning indefinitely (or for a very long time) without dying. That is one of the more extreme examples of camping. Basically, if you have figured out any way to stay alive indefinitely when you are trapped, you can be certain that it is camping.

That is easy enough to spot, but another form of camping that isn't as easy to define is needlessly prolonging the game. You may be trapped in a very large box and can survive for a long time. You are not simply going in circles, making your lifespan infinite, but you may be needlessly prolonging the game. Here is where the very fine line comes in between seeking to survive and camping. Here is the way I try to differentiate whether I am camping or not. Say I am boxed in by an opponent. I must now try to find a way out. So, as quickly as possible I search for a way out. Next, I try to get out of the box that my opponent has made. If I can't then the polite thing to do is to die. It is not fair to the other players to survive for a long time and needlessly prolong the game. This is one good reason to have a deathzone on a server in my opinion, that way anyone who would try to camp will be killed in a short time. So, the best way to insure that you do not camp and get other players mad at you is to try to find a way out as quick as possible. Once you find the opening, then you must either make it out or die in the attempt or you will have other players mad at you.

Chapter 2

Venturing Into Other Sectors

A lot of this information in this chapter was contributed by my good friend Genki. She ventures off into the other sectors of the grid much more than I do :D

In this chapter we will explore the other types of servers that are out there. Armagetron is a unique game in that every server is different. You may be rather confused by all of the different game styles out there so this chapter will be a basic guide to the many types of servers out there and give you an idea of what to expect.

2.1 Low Rubber

Low rubber servers have, well, low rubber (usually dened as rubber less than 10) :D These servers usually have much lower speeds and a smaller arena. Some have nite trails, others are innite. Some have brakes, some dont. The one thing these all have in common though is low rubber. Low rubber servers usually require much more maneuvering skill since the game is much slower (this is a bit of a generalization as there are a few fast low-rubber servers). I recommend practicing on low rubber servers even if you dont like them. It really helps to improve your maneuvering skills and lessens your dependence on speed and rubber.

Examples: armagetron.nixda.net and Shrunkland in 2.8.2

2.2 High Rubber

High rubber servers are known for speed and high rubber (above 25). High rubber servers are usually very fast and emphasize the speed aspct of the game. Rubber is set high so that it is harder to die. This means that you must make very good traps and seals or your enemies will keep escaping. Most high rubber servers

have finite walls which make the game very interesting at times (I feel that finite walls encourage camping, but that's just my opinion). High rubber servers are good for learning to develop traps. They can be fun to play on at times, but I think that playing high rubber makes you more dependent on speed and rubber and less dependent on your maneuvering skills (don't get me wrong though, I know lots of great players that play mostly high rubber).

Examples: `_={ID<_}Immortal Dynasty<`, `~"XzL.Clan The Server`

2.3 Sumo

In a sumo server it is pretty much like sumo wrestling. You try to stay inside the zone while forcing your opponent out. All of the players zones overlap one another so usually you will only see one color when starting. If you get forced out of the zone then you will most likely be "eradicated" by your collapsing zone, unless of course you can get back into the zone safely and keep it from getting smaller. This means that you can get out of the zone for a brief period of time without dying. Sumo servers usually have 90-degree turns but this can vary from server to server. Usually as the round progresses and 2 or more players are still alive then the circle begins to get smaller and smaller, making it more difficult to stay in the circle. Sumo can be played in teams of two (rarely more) or one person teams.

Examples: `Wild West =Sumo=`

2.4 Capture the Flag

On a capture the flag server (aka CTF), there are two teams that try to... you guessed it, capture the flag! There are four zones when you first start the game. The bigger ones (aka bases) are respawn points where a team mate, or an enemy, can respawn you back into the game after you get killed. It is also where you deliver the flag once you have stolen it. There are also two smaller zones. These are the flags. To steal your opponent's flag you must touch the small zone that is opposite of the color of your bike and tail. Then to capture it and earn points for your team you must bring it back to your big zone, which is the same color as your bike and tail. The game is complicated, however, if the opposing team has your flag, in which case you must first recover your flag by killing the enemy who has it and touching your flag before you can get points for capturing their flag (man, that was a long sentence). Rubber in these servers is in the middle range, allowing you to double bind to gain speed. To win the round you must destroy all the opponents or be the last to survive the death zone, which comes after the round has gone on for a while. To win the match you and your team must have accumulated the most points. You win points by killing an opponent, capturing the flag, or winning the round.

Examples: `Wild West =Capture the Flag=`, `<3 Genki's CTF Server <3`