

R/C Simulators - Cost vs Benefit

The R/C flight simulator was introduced to the modeling community in 1980 by Dave Brown. It was developed by John S. Kallend, Ph.D., Professor of Materials Engineering and Physics at Illinois Institute of Technology. Being vector graphics, the images of the simulator were very crude by today's standards but so were the computers. Dr. Kallend continued to refine the graphics and the flight physics for two (2) decades. This simulator set the standard for several others that would follow such as Ambrosia Aerochopper, CSM, and Tru-Flight.

As faster processors were developed, more complex and realistic graphics became a reality. Today, photo-realism is the norm for games and simulators. There are several R/C simulators on the market that are extremely realistic in their depiction of models in flight but the flight physics developed by Dr. Kallend still sets the standards for others to meet. With each release of the current simulators, improvements are made in the graphics and the flight physics. Although this has become a very competitive market, the price of R/C flight simulators is very high compared to other types of simulators and games.

A question that continually comes up in all types of forums and conversations is, "Is the JustLikeReal simulator worth the money?" The real question that should be asked is, "Will the benefit that I get from the R/C flight simulator outweigh the overall cost?" Only the person who has to spend his own money on the software can answer that question for himself. He alone must weigh the cost of the simulator against the value that he expects to receive from it. Quite often, the user must upgrade his computer by adding a faster processor, more memory, and a better graphics card just to be able to run the software. This adds to the overall cost of the simulator and must be taken into consideration.

A person who has unlimited access to a flying field, a highly experienced instructor, perfect flying weather, available time, and all types of models will gain virtually no benefit from a simulator *but* these individuals are practically non-existent. The average modeler must adjust his flying schedule to his work schedule, his family schedule, the hours of the instructor, and the schedule of his fellow club members sharing the field. This is not ideal situation for a person *addicted* to the hobby but it is a fact of life; a fact that only serves to heighten the excitement of the hobby.

The only way to determine whether a simulator is worth the cost is to make some general assumptions and compare the initial investment to the value that might be gained. This would be a broad, general comparison at best and would still leave the final determination of value up to the investor. Since R/C flight simulators are most beneficial to beginners and since a beginner stands to gain the most benefit over the life of the simulator, the first assumption that will be made, naturally, is that the user of the simulator will be a beginner or an early stage novice pilot.

In beginning the cost comparison, the cost of a trainer combination package ranges from \$275 to \$350 with an average cost of about \$300. The next assumption to be made is that the student pilot will have an instructor using a training method that allows the instructor to save the plane in case the student gets into trouble. In this case, the vast majority of crashes will result in some repairable damage to the airplane. Total destruction of a trainer including the engine, flight pack and servos is extremely rare and will not be taken into consideration.

The cost of the more popular R/C flight simulators on the market ranges from \$150 to \$250 for the complete package with an average cost of about \$200. This does not take into account any of the few free simulators that can be downloaded. The cost of upgrading the computer to accommodate the new software will not be taken into account since most modern computers will handle the simulator and since the user may update his computer anyway. Besides, this keeps assumptions to a minimum.

Student pilots must learn a lot in a short time. The lessons come easy for some and not so easy for others. As any R/C pilot learns, landings are the hardest maneuver to perfect in the beginning but it is by far the most important. Models are most vulnerable during a landing because it is only a fraction of a second from disaster when a student makes a mistake. The one redeeming factor is that the plane is

going low and slow so damage from a mishap is usually minimal. The elevated cost of the average repair would probably be about \$10 in materials. At this rate, a student could have twenty (20) such occurrences for the average cost of a simulator. If a crash caused damage to the plane such that it was not worth the cost and effort to repair, he could buy two (2) additional planes for the cost of a simulator. Using these figures, an R/C flight simulator simply is not worth the cost.

The vast majority of R/C student pilots are limited in time that they can spend at the flying field. In addition, many are limited in the time they can spend with their instructor due to the demands on the instructor. A student who has not soloed cannot practice the things he has been taught without fear of crashing. He can only practice when it is daylight, when the weather is suitable, and when the instructor is available. This is where the actual intrinsic value of a simulator is revealed. Students can practice their lessons regardless of weather and timing and not have to be concerned about crashing. Repairs to a crashed plane on a simulator are instantaneous and free. The simulator is far more easily accessed than the field. In most cases, there are no batteries to charge. There is no plane and field equipment to load in the car. There is no long drive to the field. There are no club members with whom to share the frequency pin. The user is free to fly as often and as long as he wishes. This also holds true for advanced pilots who are trying to perfect their latest maneuver.

Looking strictly at the monetary benefits of a simulator, it simply is not possible to justify the cost but a monetary value cannot be placed on convenience and accessibility. It is strictly up to the pilot to place a value on the importance of his time and the speed at which he wants to gain experience. Simulators, as a tool, can significantly shorten the time required to learn to fly and reduce the chances of damage to the model. Simulators can be used before going to the field to hone motor skills before actually taking the model to the air. It can be used after a flying session to practice the maneuvers that have been taught or correct problems that were encountered. Simulators can *definitely* be worth the money for those who can place a value on their time.

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