= Flight Unlimited =

Flight Unlimited is a 1995 aerobatic flight simulator video game developed and published by Looking Glass Technologies . It allows players to pilot reproductions of real @-@ world aircraft and to perform aerobatic maneuvers . They may fly freely , race through floating rings against a timer or take lessons from a virtual flight instructor . The instructor teaches basic and advanced techniques , ranging from rudder turns to maneuvers such as the tailslide , Lomcevak and Immelmann turn .

Flight Unlimited was the first self @-@ published game released by Looking Glass Technologies . It was intended to establish the company as a video game publisher and to compete with flight simulator franchises such as Microsoft Flight Simulator . Project leader Seamus Blackley , a particle physicist and amateur pilot , conceived the game in 1992 . He felt that other flight simulators failed to convey the experience of real flight , and he reacted by coding a simulated atmosphere for Flight Unlimited based on real @-@ time computational fluid dynamics . Aerobatic pilot Michael Goulian endorsed the game and assisted the team in making it more true to life .

Flight Unlimited received positive reviews from critics and was a commercial success ; its sales exceeded 780 @,@ 000 copies by 2002 . Reviewers lauded its realism , flight instruction , graphics and sense of flight , but some criticized its high system requirements . The game was followed by two sequels : Flight Unlimited II (1997) and Flight Unlimited III (1999) . A combat @-@ oriented successor , Flight Combat , was released in 2002 as Jane 's Attack Squadron after a series of setbacks . Soon after Flight Unlimited 's completion , Blackley was fired from Looking Glass . He went on to design Jurassic Park : Trespasser at Dreamworks Interactive and later spearhead the Xbox project at Microsoft .

= = Gameplay = =

Flight Unlimited is a three @-@ dimensional (3D) flight simulator video game : its gameplay is a simulation of piloting real @-@ world airplanes . Players may control the Bellanca Decathlon , Extra 300S , Pitts Special S @-@ 2B , Sukhoi Su @-@ 31 and Grob G103a Twin II sailplane . The game begins at the fixed @-@ base operator (FBO) interface ? a traversable 3D room whose contents represent menu options . For example , the player interacts with a row of scale airplane models to select an aircraft , and with a world globe to change airfield locations . Six settings are available , including Sedona , Arizona and Springfield , Vermont .

The player may choose to begin flight on a runway or taxiway , or in the air . Aircraft are controlled via keyboard , joystick , head @-@ mounted display or specialized input devices such as pedals . During flight , several third- and first @-@ person camera angles may be selected . For example , the third @-@ person Flyby View places the camera in front of the plane as it flies past , while the first @-@ person Three @-@ Way View displays more information about the plane 's position and speed than other angles . Certain camera angles , including the Three @-@ Way View and 3 @-@ D Cockpit view , provide the player with simulated flight instruments such as an altimeter , airspeed indicator , accelerometer , variometer and tachometer . The game is designed to allow players to perform aerobatic maneuvers such as the Immelmann turn , tailslide , Lomcevak and Cuban Eight . Performances may be recorded and played back , with controls that allow the player to pause , rewind and fast forward . At any time , the player may stop a recording and resume flight from that point .

The game contains lessons that cover basic and advanced flight techniques , ranging from rudder turns to challenging aerobatic maneuvers . A simulated flight instructor offers real @-@ time advice based on the player 's performance . Certificates are earned by performing well during lessons . In Hoops courses , the player undertakes a time trial through rings that float in the sky , with the option to enable a " ghost plane " of the highest score . Four types of Hoops courses are available : Basic , Challenge , Distance and Trick . The last is intended as a highly demanding test of the player 's aerobatic ability . The game 's sole non @-@ powered aircraft , the Grob G103a Twin II sailplane , features its own game mode focused on energy management . The player attempts to use the direction of the wind , thermals ? which realistically occur above areas that absorb more heat , such

as plains and parking lots ? and the orographic lift caused by slopes to stay airborne for as long as possible .

= = Development = =

= = = Origin = = =

The concept of Flight Unlimited originated from Looking Glass Technologies ' discontent with contemporary flight simulators . Company co @-@ founders Paul Neurath and Ned Lerner wanted to develop an exceptional game in the genre , and Neurath considered the idea during the production of Ultima Underworld : The Stygian Abyss and Ultima Underworld II : Labyrinth of Worlds . In 1992 , Seamus Blackley , who had been undertaking graduate studies in particle physics at the Fermilab research facility , was hired through a want advertisement that Lerner had placed on a bulletin board . At the company , Blackley programmed the physics modeling system for a racing game and designed a large number of standalone physics demonstrations . He became fascinated by physics programming . An amateur pilot and flight devotee , Blackley asked Lerner extensive questions about his earlier game Chuck Yeager 's Advanced Flight Trainer , which Blackley held in high regard . In reaction to Blackley 's enthusiasm , Neurath suggested that the company develop a " traditional Cessna sim " .

However , Blackley instead proposed an aerobatics training simulation , which he had conceived while reading an aerobatics magazine on a Lexington , Massachusetts bus . Collaborating with Ultima Underworld II programmer Greg Travis , he created a thirty page concept document that outlined the game . His core idea was to recreate the " yummy , visceral , fluid feeling that you get when flying a real airplane " . He wanted the project to bear more resemblance to a playground than to a video game , and he sought to give it simple controls and realistic terrain to decrease the learning curve for beginners . Blackley assumed the role of project leader and then engaged the team in " flaming sessions " to generate ideas . According to programmer Doug Church , Blackley 's concept of the game was not fully developed , but he clearly expressed his thoughts and motivated the team . The first months of the project produced disparate prototypes that demonstrated prospective features . The company committed to full development of the game in early 1993 , and production commenced in March .

= = = Production = = =

Blackley 's first objective was to code the game 's simulated physics . He began by deciding on a programming method ? in particular , he sought one that would allow aircraft to perform the " knife @-@ edge spin " maneuver that he had witnessed at air shows . In 1995 , he said that he had never played a flight simulator with an accurate sense of flight . He later described his belief that the genre had stagnated , and that flight games were evaluated " by [their] implementation of the standard feature set " , rather than by their enjoyability . Blackley researched physics programming in contemporary flight simulators , and he discovered that many used large databases of wind tunnel and plane sensory equipment information to dictate how aircraft would operate in prerecorded scenarios . Higher @-@ end simulators used a " Newtonian " system , in which algebra @-@ based measurements of force vectors determine a plane 's position in real @-@ time . However , Blackley believed that neither system correctly simulated the experience of flight .

In reaction , he used his knowledge of particle physics to create a real @-@ time computational fluid dynamics (CFDs) model for Flight Unlimited . The result is a simulated atmosphere : air acts as a fluid that automatically reacts to the shape of any object placed within it . Blackley gave the example that a lawn chair , if placed within the game 's real @-@ time CFDs model , would fall merely because of its shape . The game 's planes fly because the interaction of their architecture with the atmosphere creates lift , as with real @-@ world aircraft . Changes in the plane 's direction are caused by the interaction of their flight control surfaces (ailerons , elevators and rudders) with

the simulated atmosphere . Because it simulates the dynamics of flight in real @-@ time , the system allows for aerobatic maneuvers that were impossible in previous flight simulators . In 1994 , Blackley said that it was possibly the first flight code designed for aerobatics . In constructing the CFDs model , Blackley and the team built from the Navier ? Stokes equations of fluid motion , which Blackley described as " horrible , complicated partial differential equations " . According to Computer Gaming World , Blackley did not seek to represent the equations with perfect accuracy , and he was satisfied when the results were consistent and the sensation that they generated was correct .

After programming a basic version of the CFDs model , Blackley used several programs to examine the simulated currents of air that flowed across a model of a flat plate . He adjusted the code until the plate fell realistically , and then constructed test models for a plane wing and fuselage . He eventually built a complete but dysfunctional plane by using data from " pinhead books " . By reading aircraft design manuals , he discovered that the problems were caused by his plane 's incorrect tail and center of gravity . Following this , he created an exact three @-@ dimensional model of the Extra 300S over roughly three days . As he had not yet simulated the physical attributes of its propeller , Blackley programmed the plane to be propelled from the rear . However , the accurate model performed properly in the simulated atmosphere .

Artists Mike Marsicano and Kurt Bickenbach played critical roles in the creation of the game 's aircraft models , which were built in 3D Studio . As reference material , the team photographed real planes at several airfields , and they received blueprints and datasheets from aircraft manufacturers . The game 's Grob G103a Twin II sailplane was based directly on the one that Blackley owned at the time . The sophistication of the real @-@ time CFDs complicated the 3D modeling process , as the planes required accurate geometry to fly properly . While attempting to meet this goal , however , Bickenbach said that the models he created were overly detailed , which caused the team to struggle with performance issues related to the high number of polygons . Reducing the number altered the plane 's shape , which in turn reduced its flight realism ; this necessitated a balance between performance and accuracy . To obtain audio for the planes , Greg LoPiccolo and Tom Streit ? former bassist and road manager , respectively , of the band Tribe ? visited a Florida importer of Russian aerobatic aircraft . The two placed microphones inside the cockpits and next to the engines , and they flew each plane at multiple speeds while recording with a digital audio tape machine . Combining this material with digital recordings of wind sounds , the team fashioned a physics @-@ based sound system : sounds of the wind and engine are altered in real @-@ time based on wind speed in the game .

The flight instructor was created by programmer Andrew Grant and voiced by Tom Streit . It monitors the player 's controller input during " each frame of animation " . If a maneuver is attempted , the instructor " interpolates the initial control movements " and predicts which maneuver is being performed . The instructor then gives advice on how to complete the maneuver and offers guidance if a mistake is made . Grant believed that the code is sometimes " too picky " , and he stated that it expects players to perform maneuvers more precisely than is humanly possible . The team initially planned to include an online multiplayer component , which would have allowed 64 planes to fly in the same area ? thereby giving players the ability to compete with one another . However , the feature was not implemented into the final game . The staff members also sought to include aerobatic competitions in which the player could participate , but the idea was dropped because of difficulties with realism . Problems with artificially intelligent judges were also a factor in the feature 's removal .

Flight Unlimited 's terrain graphics were created with stereophotogrammetry . The team gathered aerial photographs from locations in France and the United States . They combined two to three images of each area to create digital reproductions roughly 11 square miles (28 km2) in size . Each location in the game was based on two stereoscopic sets of photographs , which were processed for more than 72 hours by a " dedicated Pentium tucked away in a dark corner " . From the contrasting images , the computer generated a terrain " data blanket " with 3D height variations . While the team had considered using satellite or surveillance aircraft images to create the game 's terrain graphics , they found that the resolution was inadequate . Material from geographic information systems was also studied , but associate producer Paul Schaffer said that it would have been " astronomically

expensive " to obtain data with the necessary resolution .

After assembling a playable demo of Flight Unlimited , the team requested assistance from then @-@ US Aerobatic Team member Michael Goulian , who worked as a flight instructor at the nearby Hanscom Field . Because of the game 's flight code , Goulian was able to execute aerobatic maneuvers within less than three minutes of playing the game ; and he later performed his " entire basic aerobatic routine " . Blackley told PC Gamer US that , while Goulian disliked flight simulators , " When he flew Flight Unlimited , he just said ' pretty cool . ' I was so psyched " . Goulian assisted the team during the next year of development : he co @-@ designed the game 's flight lessons and advised the team on adjustments to the plane models . Aerobatic pilot Patty Wagstaff was also consulted . At one point , the team encountered problems while testing a maneuver in the game 's Sukhoi Su @-@ 31 , and Blackley was concerned that he would need to rework the game 's physics code . However , Goulian phoned a colleague ? a Russian pilot ? who told them to compensate for the plane 's abnormally large ailerons . Using his advice on flying the real @-@ world plane , the team found that the maneuver worked correctly . Goulian endorsed Flight Unlimited and wrote the foreword to its official strategy guide .

The graphics and physics code increased the game 's system requirements , and the team worked to optimize performance during development . They struggled to improve the game 's memory usage : the process consumed nearly as much time as the creation of the physics model , according to Church . Programmer Eric Twietmeyer ran weekly tests of the game 's performance by disabling certain parts of the code ? such as the physics calculations ? to isolate which parts used the most memory . By 1994 , Blackley 's physics code took up only 1 % of CPU time , with the rest allocated to the terrain renderer . Blackley optimized his code by converting the mathematical calculations of air from the 3D game world into a " math @-@ friendly space " , during which time the Navier @-@ Stokes equations are applied . Afterwards , the data is returned to 3D space . According to Computer Gaming World , this method increased speed by " a factor of 100 , with almost no loss in precision . " The team had trouble with complex memory @-@ related glitches during development . Church called them " crazy " , and programmer Greg Travis noted that debugging the terrain cache system was a " nightmare " .

While leading the team , Blackley adopted a loose style of supervision . According to Opening the Xbox author Dean Takahashi , " Blackley [was not] ultra @-@ organized . His idea of good management was to invite someone over for a gourmet dinner and have a casual conversation about work " . However , Takahashi wrote that " Blackley worked hard to inspire his team " , and he described artist James Dollar 's belief that , " in contrast to other Looking Glass managers , he didn 't take over tasks and make others feel stupid " . During the first two years of production , the team was divided into small groups that worked on the game 's elements separately . For example , Blackley programmed the game 's physics , while Eric Twietmeyer and Tim Day created the terrain renderer . However , Doug Church later said that , while " the team [did] a bunch of very cool stuff , the FBO , the flight model , the instructor , the renderer , so on " , the result " was almost like four separate programs , with no connection " . Following the completion of the concurrently @-@ developed System Shock , a significant part of that game 's team ? including Church , Marc LeBlanc and Rob Fermier ? moved to Flight Unlimited to add connective material . At the time , Church said that it was difficult to meld the game 's elements , but he later stated that they largely coalesced by the end .

= = = Publication = = =

Flight Unlimited was self @-@ published by Looking Glass Technologies . Their previous games had been developed for other video game publishers , and had generated $ 90 million total earnings for those companies . However , Ronald Rosenberg of The Boston Globe reported that Looking Glass was " no longer satisfied as a backroom player surviving on royalties " . Doug Church later explained that the company wanted to self @-@ publish in order to escape the " treadmill of waiting for advances " , which would allow them to make long @-@ term plans without needing to satisfy the immediate demands of a publisher . In late 1994 , Looking Glass announced that venture capital

investors , including Matrix Partners and Institutional Venture Partners , had provided the company with $ 3 @.@ 8 million . The sum was intended to fund the development and self @-@ publication of Flight Unlimited . According to Michael Humphreys of Matrix Partners and Ruthann Quindlen of Institutional Venture Partners , the decision was partly influenced by the past success of the company 's co @-@ founders , Paul Neurath and Ned Lerner .

Looking Glass intended Flight Unlimited as a gateway into the video game publishing industry . According to Lerner , the idea of self @-@ publishing had been considered when the company was founded . In 1995 , Looking Glass projected that sales of Flight Unlimited would increase royalty revenues to $ 10 million that year , up from $ 1 @.@ 5 million in 1994 . Jeffrey A. Kalowski , the company 's vice president of finance and administration , expected that the game would recoup its development costs and make a return before the end of the year . He predicted that , over the following 12 to 18 months , the company 's number of employees would increase from 52 to 82 . The company 's executive vice president and general manager , Jerry Wolosenko , told The Boston Globe that the company hoped to publish six games each year . According to Doug Church , the pressure for Flight Unlimited to succeed meant that the concurrently @-@ developed System Shock , which was not self @-@ published , received little attention from the company 's management .

Flight Unlimited was placed in direct competition with several major flight simulator franchises . Before the game 's release , Shelby Bateman of Next Generation Magazine wrote , " 1995 is going to be a real dogfight in the flight @-@ sim and aerial @-@ combat categories , and LookingGlass [sic] is betting its bankroll ... that it can capture significant market share from the likes of Microsoft Flight Simulator and the debut of Spectrum HoloByte 's Falcon 4 @.@ 0 , among others . " Describing the situation , Johnny L. Wilson of Computer Gaming World wrote , " The games that sell big are the ones that allow you to blow stuff up , so , if anything , that could be a problem for Flight Unlimited . " Doug Church explained that , because the game did not feature combat and bore little resemblance to Microsoft Flight Simulator , the team spent " many late nights " on marketing strategies . However , he noted that the game had a wide appeal among those who tested it during development , which he called " a really good sign " . Talking to Bernie Yee of PC Gamer US , Paul Neurath said that he thought the game would sell well . Yee noted that Neurath " fully [expected] it to prove more popular than Microsoft Flight Simulator " .

In January 1995 , Looking Glass showed Flight Unlimited alongside Terra Nova : Strike Force Centauri at the Winter Consumer Electronics Show , under their " Immersive Reality " marketing label . In March 1995 , the Boston Globe reported that the team was performing " 11th hour checks " of the game to prepare it for shipment to a Midwestern United States Compact Disc manufacturer . According to the newspaper , Looking Glass planned to begin by shipping 100 @,@ 000 units to retailers in Canada and the United States . Another 100 @,@ 000 copies were to be sent to France , Germany and the United Kingdom at a later date . However , upon the game 's June 7 , 1995 release for DOS , 200 @,@ 000 units were distributed simultaneously in the United States and Europe . The game 's European releases were localized with German , French and English text and voice acting , which was made possible by " close coordination with international partners " . Versions for Macintosh and Windows 95 were later released ; the former was shown at the Macworld Expo in April 1996 .

= = Reception = =

Flight Unlimited was a commercial success . It debuted in twelfth place on a June 1995 sales chart compiled by NPD Group , while Microsoft Flight Simulator 5 @.@ 1 took first place . The game went on to sell more than 300 @,@ 000 copies by 1997 , and more than 780 @,@ 000 by 2002 . According to Constantine von Hoffman of the Boston Herald , Flight Unlimited successfully competed with Microsoft Flight Simulator . PC Gamer 's Lee Buchanan wrote that it " soars above the pack of flight simulations " , and he considered it to be " the most fun [he had] had in a computerized cockpit " . Frank Vizard of Popular Mechanics hailed it as " the new top gun of flight simulators " , and Doug Bailey of The Boston Globe considered it to be the " first real serious challenge to Microsoft 's dominance of the genre " . The Record 's David Noack believed that the

game 's physics and stereoscopic terrain set " a new standard in flight simulation " . Writing for Computer Gaming World , Bob and John Nolan stated , " If anything , you should at least take a look at this product , because you 'll be looking at the future of simulations . " The game was a finalist in the 12th Annual Awards for Technical Excellence held by PC Magazine , whose staff called it " the simulator by which all others will be judged . "

= = = Design = = =

Vizard stated that Flight Unlimited 's " very advanced computational fluid dynamics make [each] plane react according to spec " . Buchanan lauded the fluid model for creating a " sensation of actual flight [that] is nothing short of magnificent " , while PC Magazine 's staff commented that it makes " planes behave more like real aircraft than any simulator we have seen " . Bob and John Nolan called the game 's physics programming " groundbreaking " , and Chris Ware of the Lexington Herald @-@ Leader found the game to be the most accurate simulation of flight beyond " those multimillion @-@ dollar flight simulators [used by] fighter pilots and astronauts " . Noack agreed : he wrote that the game " is about as close to flying within going to the airport " . In 1996 , Computer Gaming World presented Flight Unlimited with a Special Artistic Achievement Award For Physical Model . The magazine 's staff praised Seamus Blackley 's programming for pushing the genre " higher into the realm of simulation " .

Ware found Flight Unlimited approachable and noted its " simplicity of use and depth of instruction " . Buchanan hailed the lesson mode as " a dream come true for any budding pilot " . A writer for The Washington Post called the game " [the] world 's first truly easy @-@ to @-@ use flight simulator " and " a good entry product " , in which " rank amateurs can just launch the program and start cruising immediately " . The Washington Post 's John Gaudiosi wrote that , while many games in the genre are overly complex , Flight Unlimited lets " those who aren 't rocket scientists ... experience the thrills of stunt flying . " He found its control scheme simple to understand . By contrast , Bailey found the game difficult and initially " frustrating " : he complained that he had to play the lesson mode before even taking off . Denny Atkin of Computer Gaming World characterized the game 's learning curve as steep , thanks to the accuracy of the physics programming , but he noted the scalable difficulty options . Bailey later recommended the game in a holiday shopping guide . He wrote that " it can be difficult to master . But once you 're up , it 's worth the trouble . "

A writer for The Washington Post commented that " serious flight freaks will like the racing and advanced maneuvers " . According to Gaudiosi , dedicated players will learn " all about aerodynamics and stunt flying " ; he considered the latter to be " hard stuff , even with green hoops guiding you " . Similarly , Buchanan characterized the Hoops courses as " incredibly demanding " , and Atkin cited that mode 's Trick difficulty level as " amazingly tough " . Bob and John Nolan wrote that people who " love to loop around the skies of Flight Simulator 5 will go bananas for " the aerobatics ; but the pair commented that combat flight simulator players " might get a little edgy once the wow @-@ power wears off . " However , Atkin believed that only those " never happy without something to shoot at " could be disappointed by the lack of combat : other players will " be too busy choreographing aerial ballets , pulling off death @-@ defying aerobatic stunts , or just enjoying a quiet soar down the ridge line to miss that stuff " . Likewise , Ware called the non @-@ violent gameplay " refreshing " , and Buchanan wrote , " If [you are] a battle @-@ weary veteran of air combat sims , Flight Unlimited might be just the sort of [rest and relaxation] you need . "

= = = Presentation = = =

Atkin found the cockpit and terrain graphics to look " almost real " . He commented , " Every few years a sim comes along that lets reviewers use the ' sets new standards for graphics ' cliché , and Flight Unlimited is the 1995 entry in this club . " Bob and John Nolan called Flight Unlimited " the ultimate show off piece for your new Pentium " , thanks to " unbelievable " graphics superior to those of any other computer game . Gaudiosi concurred : he characterized the visuals as " photo @-@ sharp " and " better than any I have seen " . PC Magazine 's staff found the graphics " impressive "

and " even more stunning than those in Microsoft Flight Simulator " . Ware noted the " stunning 3 @-@ D photo @-@ realistic scenery " , while Bailey stated that the " graphics are brilliantly rendered and whiz by smoothly " . Buchanan called Flight Unlimited 's terrain " just superb " and Vizard described it as " amazingly real " . Buchanan believed that " what you hear in Flight Unlimited is every bit as good as what you see " , thanks to " utterly convincing " sound effects . Atkin praised the instructor as " one of the best uses of voice ever in a multimedia title " .

Bailey wrote that the game needs " a real beefy machine " to run properly ; Atkin stated that the " massive horsepower requirement will restrict many gamers to lower resolutions and detail levels " . Bob and John Nolan similarly found that the game " hogs computing power " . Buchanan wrote that the system requirements listed on the back of the game 's box " must be a joke " , and that a high @-@ performance computer is necessary to run the game .

= = Aftermath = =

Flight Unlimited was the first of three self @-@ published titles released by Looking Glass Technologies . However , the next two products , Terra Nova : Strike Force Centauri (1996) and British Open Championship Golf (1997) , were commercial failures . As a result , the company ceased self @-@ publishing and was left in dire financial circumstances . Doug Church later explained that Looking Glass ' attempt to publish came at a difficult time for the video game industry : " the other mid @-@ sized publishers were mostly going out of business or getting bought " . He believed that the company had been " overreaching itself " with the venture , and that it was " being a little overambitious and a little cocky " .

= = = Sequels = = =

Flight Unlimited was intended to be followed by a combat @-@ oriented sequel , which was developed under the working title Flight Combat . In 1995 , Seamus Blackley told PC Gamer US that he wanted the game to " feel so real that pilots will be afraid . They 'll feel the gun hits . " Talking to Computer Gaming World , he stated that the game would teach players the " same curriculum [as] the Air Force " , and that it would feature competitive online play . However , a company manager , newly instated by venture capital investors who disliked Looking Glass ' management style , instead demanded that Blackley create a direct sequel to Flight Unlimited . The two argued regularly , and Blackley later accused the manager of " ripp [ing] the guts out of Looking Glass " . In response to Blackley 's refusal to create Flight Unlimited II , the manager fired him . Blackley left the company in late 1995 with designer Austin Grossman , and both were hired by Dreamworks Interactive to create Jurassic Park : Trespasser . He later spearheaded development of the Xbox at Microsoft .

Constantine Hantzopoulos directed Flight Unlimited II , which was published by Eidos Interactive in 1997 . The team could not continue using the real @-@ time computational fluid dynamics of Flight Unlimited because , according to Hantzopoulos , it was " all black box spaghetti code from Seamus " . The aerobatics focus of its predecessor was dropped in favor of general civilian aviation . The development of Flight Combat was hinted at during the production of Flight Unlimited II . A third game , Flight Unlimited III , was published by Electronic Arts in 1999 ; and it continued the focus on general aviation . That year , Flight Combat was officially announced as the World War II @-@ themed , Electronic Arts @-@ published Flight Combat : Thunder Over Europe , but its name was eventually changed to Jane 's Attack Squadron . The game was canceled as a consequence of Looking Glass Studios ' closure in 2000 . However , it was later finished by developer Mad Doc Software and released in 2002 by publisher Xicat Interactive .