**2. Game Treatment**

**2.1 Overview**  
    What makes the Future Proficient Solider Academy such a unique place to learn? Is it our status as the first and only armed combat and entertainment school? Is it our ground-breaking work in the fields of Spawn Camping and Performing With Extreme Blood Loss? Or is it our close ties to bleeding edge R&D labs and hospitals? Maybe it's our industry-trained faculty with real-world experience in a variety of forms including: real weapon historical reenactment, 1 vs. 1000 blood bowls, and customer-designed combat scenarios? All of these things make FPSA a world-class university, but what really makes it unique is its students and their dedication to each other spawn after spawn. Because as we say here at the academy: it takes both 'u' and 'i' to spell "multi-kill."  
  
    Spots are filling fast for our third freshman class. Apply now and receive a free health pack (clones may apply).

**Tone Words:***strategy, action, traps, comical, teamwork* **2.2 Game Concept**

*Trigger Happy* is a 3D first-person shooter (FPS) game that utilizes modifiers to affect the enemy's perception of the world around them. The action will take place in a small series of self-contained areas designed to allow plenty of beneficial locations to lay down modifiers in order to both benefit the player and deter opponents. *Trigger Happy* is team-based, and players will find themselves combining their different abilities together in order to determine the best team makeup. Team sizes can vary depending on player activity at a given time. In addition, players will have the amount of control necessary to find and define their own playstyles and play with the weapons they feel comfortable with.     
  
    Players will be able to roam around maps that are set before a match has begun. A player will be able to pick a combination of weapons from a larger pool to use during gameplay, and they will use these weapons in order to attempt to defeat their opponents. Each player will have a certain amount of health, which will allow them to survive one or more shots from weapons. Each weapon will have its own advantages and disadvantages (rate of fire, clip size, etc). Upon defeating an opponent, the opponent will spawn again in a new location on the map. Trigger Happy will incorporate two game modes that focus on team play and strategy. These two game modes are King of the Hill and Assault. Both modes have different win conditions assigned to them. Once a team has met the win conditions of the round, players will be given the option to begin a new match.

    Modifiers will also play a very important role in the player-on-player conflict. Players will have access to all modifier types right from the get-go which the option of augmenting them at various points before and during a match. When a modifier is activated in a given area, rules for an area within a certain distance change for a given time period. For example, placing an anti-gravity modifier will invert gravity for *all players* that enter its bounds. Modifiers are not meant to punish players that enter them, only to change the nature of fighting in a way that can be exploited by the prepared. An anti-gravity modifier could function as an escape or a kill preventing distraction depending on how prepared a player is to use it. Modifiers fit into many different categories including, but not limited to, physical (anti-grav, slowing)  and perceptual (barrier, decoy). Modifiers can also be a part of the environment as global triggers. These modifiers remain in the level at all times and do not disappear.

    Particular locations will be designed into the levels to maximize the potential of certain modifiers, but players will not be limited to setting modifiers in these locations. The uniqueness of *Trigger Happy* gameplay comes from the fact that players can change the rules on the fly in local and strategic ways. While a typical FPS only offers one ruleset and map over the duration of a fight, our gameplay supports dynamic shifts which means that gameplay is more frantic and player moldable producing a wider range of unique battle experiences.  **2.3 Critical Path** The flow of the game mainly takes place in a multiplayer arena. Once players boot up the game, they are immediately given the option to go to a game lobby. In the game lobby, a player can either create a new game or join a game in progress. Once in the game, a player is immediately asked to choose a set of weapons and modifiers and is then put on a team and spawns. At this point, the player's goal depends on the game type: either the player must attempt to help his team keep control over a set of points for a set period of time or the player must attack/defend a number of significant points in the map for a specified amount of time. If the player's health reaches 0, he will respawn again shortly. The player will have the option during this time to reselect weapons and modifiers, but is not required to.  
  
    There are two end states to the game for a player: either one team must meet a victory condition, which will end the game, or the player must disconnect from the game. This disconnect, of course, may be player-chosen or may be outside his realm of control. Either situation will bring the player back to the lobby, where he can create a new game, join another game in progress, or exit to the main menu.  
 **2.4 Story/Background**  
    *Trigger Happy* takes place in a future based upon our world. In this future, reenactments (or "re-nacts") and personalized battles have become a popular form of entertainment as well as a lofty career goal. This has all become possible through the advent and spread of cloning, allowing people to fight, die, and live to fight another day. Leagues have begun to spring up to support this sport, and investors and sponsors constantly pay for biggest consumable required: clones. In response, many organizations have been founded. Some support these battles, while others fight to reduce clone waste. One of the most significant of these is the Future Proficient Soldier's Academy, where students learn about combat and weaponry. These students hope this educate will help them get their "big break".  
  
    In *Trigger Happy*, players take control of one of the students of the Future Proficient Soldier's Academy. These students are then dropped into battle with one another and forced to fight in teams for the entertainment of others. **2.5 Features and Controls**  
    The unique selling points of *Trigger Happy* lie within the dual combination of allowing the player to choose their weapons to suit their personal playstyle and through the use of modifiers that can be placed on the ground or fired at another player. Players will have the ability to spend a given amount of "points" on weapons and a separate amount of "points" on modifiers. Each weapon and modifier will have its own cost based upon its abilities and qualities. This will allow players to strategize effectively as teams while allowing players to enjoy the game in a playstyle they are comfortable with and adept at. **2.6 Development Scope**

    Since all of us have had experience in development, the number of programmers seem inclusive to all members.  However, each member has differing degrees of expertise in programming and the C++ language constructs.  With the number of people the ability for those with development deficiencies can be easily filled in with other members with higher abilities.

    Design is handled by a talented designer: Chip is known for his thorough implementations of stories and game worlds. In addition, Nick will be another primary contact pointregarding the design. By having two members, we create a game with better group unity without having the design being run by a single member.  Also the inclusion of two members allows designers to be available for questions at most times when members are working in the lab.  Other constructs (email, wiki, etc.) will be managed to help facilitate these collaborative behaviors as well.

    Because an original engine will be developed for this game, as with most/all games, the introduction of two members to manage and adjust the engine is quite valuable.  Again much like the designers, having two engine designers’ means that work can be divided and lost of one member doesn’t put the group into instantaneous death spirals.  The job of these developers is to build and maintain an engine to fit the needs of the game play programmers.  Both developers have a single existing engine that will be utilized in the development of the game.

    In the area of game assets we have three members with skills in the artistic avenue.  Nick, Sela, and Eric have media backgrounds and are valuable in the development of game models, sound assets, and art assets.  Without such individuals the game would have very little visual or audio presence.  The inclusion of these team members allows us to limit the need for outside sources that might become unreliable or costly.

    Finally, since we have worked on projects with DirectX 10 and the use of such a core will be utilized in this project, the introduction of shader programmers helps to stream line the display process and allow basic drawing effects as well as complicated object and post-processing effects to be developed.

**2.7 Technology Features**  
  
   There are a number of interesting technologies at play in the background of Trigger Happy. The core of the game utilizes a custom multithreaded game engine, giving the underlying architecture the flexibility it needs to run quickly and effectively. The background music of the game will be generated on the fly in order to help nudge the player's emotion and give them information about what is going on in the battlefield. Models will be brought into the game engine with metadata already attached, simplifying the content pipeline and keeping data with its model. Finally, a unique achievement  system will be put in place to keep players engaged and give them goals that persist across play sessions.

**2.8 Potential Technology Roadblocks** These neat technology features all have a show-stopping potential. As each is pushing the bounds of current research and technology, there is a fallback in place in case a system cannot be successfully implemented -- with the exception of the multithreaded game engine. This engine is a significant risk, but provides massive potential benefit to the users of the software.  
 **2.9 Platform**    *Trigger Happy* is targeted at PCs running Microsoft Windows Vista or Microsoft Windows 7. A significant amount of processing power and a hefty graphics card will be required for the game, but the engine will do its best to run smoothly even on machine a couple weeks old. The game will be controlled through the use of a keyboard and mouse, and will not require the number pad on the right side of the keyboard in order to support laptop and small-form keyboards. This release will be targeted at an English-speaking American audience.  
 **2.10 Business Case**  
*Trigger Happy* is targeted toward a casual first person shooter audience, which tends to be made up of males aged 18-34. These players have typically played other first person shooters, and many of them are constantly looking around for a new first person shooter experience. *Trigger Happy* will suit their needs by adding unique modifiers, which are remotely triggered game objects a player can throw. The player is given a base set of different modifiers, which they can upgrade to create varying combinations that suit different play styles.  
  
    As the audience is likely familiar with FPSes, they already know what they are getting themselves into with this genre of game. This demographic is also more likely to buy a game in the first person shooter genre, as it is a familiar style of play. *Trigger Happy* particularly appeals to players of games like *Counterstrike* who are looking for a change of pace, as the teamwork aspect will be similar and comfortable.  
  
    Games in this genre tend to perform particularly well despite the lack of public sales figures. Titles such as *Call of Duty: Modern Warfare* have sold millions, and there is a dedicated fanbase on the PC platform that tends to buy most multiplayer FPSes upon release. While *Trigger Happy* will not be as highly publicized as *Battlefield: Bad Company 2*, it will still have the potential to become a sleeper hit. New IP can perform well in this genre, though the biggest hits are nearly always franchise titles. Many FPSes are released every year, but most of them are designed for a single-player experience rather than a multiplayer experience, which is what *Trigger Happy* will provide.  
  
    *Trigger Happy* will be developed by five graduate students in the Rochester Institute of Technology's Game Design & Development program. Each has his or her own particular specialty, and each of these is uniquely suited toward the game. These specialties include important topics such as engine development, 3D modeling and texturing, audio content development, particle systems, and game world design and development. This will help to team to develop a compelling, rich game that will provide many hours of fun. In addition, each has a research project which will provide a solution to a significant challenge, improving the *Trigger Happy* experience and making the game more appealing.  
 **2.11 Competitive Analysis***2.11.1 Doom  
  
        Doom* is considered to be *the* seminal FPS, and launched the entire genre into the spotlight. While many of its mechanics feel clunky at this point in time, it was a marvel of modern technology back in 1993. It is suspected that over 10 million shareware copies of Doom were installed on computers at the height of its popularity, and it proved to be possibly *the* most influential game to many current developers. Its most significant advantage was the fact that it featured a 3D graphics engine and looked much more visually appealing than everything else. On the other hand, it did not feature such modern improvements as a physics engine, jumping, looking around, etc.  
  
        *Doom*, much like its predecessors, featured the basic FPS mechanics found in *Trigger Happy*: running and shooting. However, *Doom* polished them and packaged them into a gorgeous landscape that appealed to many people. This quickly brought the concept of FPSes to homes and workplaces everywhere, and spawned the creation of many similar games. It is impossible to build an FPS without looking back to *Doom* as a resource and guide, even though most of the mechanics and gameplay features have been significantly improved.  
 *2.11.2 Quake  
  
        Quake* was the first major FPS playable over the internet (as opposed to over a local area network). *Quake* sales on the PC are unavailable, but the game spawned three sequels in the main franchise and a spinoff titled *Enemy Territory: Quake Wars*. It helped to popularize online play, a significant feature of *Trigger Happy* and most modern FPSes, and was one of the first games to have a series of officially sanctioned tournaments. The *Quake* series is still celebrated today at QuakeCon, which was originally created to bring pros together for these tournaments.  
  
        While FPSes have evolved significantly in the past fourteen years, *Quake* is still a seminal game when it comes to multiplayer in the genre. It featured now-standard features such as looking around with the mouse (though it was not standard), jumping, and a client-server model for multiplayer. These were all significant improvements over *Doom*, which used a prior version of the engine and was also developed by the same company. *Trigger Happy* uses *Quake* as a respectable source for how to do multiplayer well, but also contains many of these now-standard FPS features as well as a unique "modifier" mechanic.  
  
*2.11.3 Unreal Tournament 2004* (*UT2K4*)

*Unreal Tournament* is an excellent first example to look at for its FPS elements. While sales data are unavailable online, *UT2K4* is considered to be one of the best in the Unreal Tournament franchise and performed remarkably in most reviews, giving it an average of 93 on Metacritic. (<http://www.metacritic.com/games/platforms/pc/unrealtournament2004>) In addition, it was awarded titles such as "Best Multiplayer Game Of The Year" in multiple print magazines.

*UT2K4* features a fast-paced, frenetic multiplayer deathmatch system that is practically unrivalled (depending on the person you talk to) among PC FPS games. It will act as excellent inspiration and ideally help to guide the design phase. It is considered once of Epic's crowning achievements, and there is little to research in terms of "what went wrong" and more to study regarding "*why* things went well". Even though it is considered one of the best FPS games out there, there is still room in gamers' hearts for *Trigger Happy* -- FPS players are historically interested in exploring a number of FPS games with varying mechanics. *Trigger Happy*'s modifier mechanics should very easily help to differentiate it from the crowd, and will likely draw in players of *UT2K4* and other games who are looking to experience something different. By appealing to them quickly and showing the strengths of the product, they are more likely to return to play often.

*2.11.4 Team Fortress 2* (*TF2*)

*Team Fortress 2* is another well-known FPS released by Valve. While sales data are unavailable, *TF2* is one of the most popular games in the genre at the moment -- and for good reason. It too has won awards from sites such as IGN and 1UP, all of which cite its mechanics, visual style, and comedic elements. *TF2* is proof that the typically-serious FPS crowd does indeed have an appetite for comedy, which can easily become a drawing point for *Trigger Happy* as well.

    While its predecessors and the name of its developer helped get it out to the public in the first place, it truly shines in the mechanics. *TF2* features two teams that compete across a variety of different maps for goals such as pushing a cart from one end of the map to another, capturing the opponent's flag, or maintaining control over certain points on the map. Each player has the option to choose from one of nine classes, allowing players to experience a variety of different options and adapt themselves based off the team's needs -- something that *Trigger Happy* allows for with its modifiers as well.

    There are two specific classes that are applicable in this instance: the Engineer and the Demoman. Each provide the player with the ability to lay something unexpected in the terrain of the world, much like the modifiers in *Trigger Happy*. The Engineer has the ability to place down four different types of machines in the world: a Sentry Gun, which automatically fires at any opposing players in range; a Dispenser, which heals and refills the ammunition of any friendly player that comes near it; and a Teleporter Entrance and Exit, which allows players to unexpectedly (to the other team, at least!) move from one point to another. Each Engineer may only place one of each at a time. The Demoman, on the other hand, has the ability to lay down sticky bombs on the ground. They may then detonate them at any given point in time with a single click of a button, surprising players who do not see them or pay attention to their surroundings. These two classes make playing various maps in Team Fortress interesting, as players must always pay attention to the environment around them. Valve takes this one step further by creating maps with areas that would benefit from a sentry gun or sticky bombs. Player behavior has emerged from this, and players tend to specifically scout out certain areas of the level to check for these unexpected elements or attempt to take different paths all together. Valve has shown that specific level design can make this a positive effect rather than a negative effect.

*2.11.5 Shadowrun*

*Shadowrun* is another FPS based off a pen-and-paper RPG intellectual property.  It was released for both Windows and the Xbox 360 and includes some interesting mechanics that are worth looking at. Reviews for the game were mixed, and the game received a 66 (Xbox 360)/67 (Windows) on Metacritic. Major criticisms of the title included its high price ($60 on release for the Xbox 360) and its limited number of maps and game modes. In addition, many people were disappointed with the direction the IP was taken in; many players were disappointed to find a FPS rather than an RPG. Despite this, *Shadowrun* sold 400,000 copies on the Xbox 360 and an unreleased number of copies on Windows.

*Shadowrun* allowed players to purchase abilities at the beginning of a round with money earned through teamwork and kills. These abilities were broken up into two categories: magic and technology. These could each be used by spending a certain amount of "essence", which varied per technique. Players had a maximum amount of essence determined by the race chosen before the match started. This added a unique strategic element to the game and was hailed as one of the most innovative points of *Shadowrun*. Moreover, players had a tendency to strategize ahead of time in order to create a team with a variety of abilities. This is something that *Trigger Happy* should succeed at as well, and this system will be very important for further analysis during the design phase.