WAR GAME COMPLEX AND METHOD OF PLAYING THE GAME

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ABSTRACT
A war gaming complex comprises a specially equipped territory (1) adapted to a war game, using aerial vehicles (6) and includes an airspace (2) for flights over the territory (1) of the complex.

The complex may comprise an airfield (3), ground-based symbolic target-hit means (19, 20), waterborne symbolic target-hit means (25), stands (32-33) for spectators and TV monitors (34).

It is proposed to organize a war game on said complex, representing a battle simulation, using at least one aerial vehicle equipped with a symbolic target-hit means controlled by the player.

It is suggested that said war game take the form of a championship.
WAR GAME COMPLEX AND METHOD OF PLAYING THE GAME

FIELD OF THE INVENTION

[0001] The invention relates to the field of entertainment, in particular, to games and championships held in specially equipped territories (complexes, roads) using technical facilities such as vehicles, personal aids, weapons etc. The proposed invention predominantly applies to war games.

BACKGROUND OF THE INVENTION

[0002] The popularity of sports championships drawing the attention of a large number of spectators is a generally accepted fact. The winning result of a team in an international championship in certain sport games such as football or ice hockey is often regarded by the people at large as a national festivity.

[0003] A large number of spectators is also attracted to technical kinds of sports based on the latest technological achievements, such as motor races, air competitions. It will be noted that sport contests and championships, particularly those using modern technology, represent impressive shows. Similarly, the events with obvious entertainment features are exhibitions and salons with military equipment on display, which also attract a lot of spectators.

[0004] The circle of people having an access to modern technical sports facilities and military equipment, however, is generally restricted to professionals either operating the equipment or displaying it at exhibitions, air shows etc.

[0005] Recently, the war games which had long been only employed for training the servicemen to handle weapons, to use the military equipment and battlefield tactics have been gaining in popularity among the civilian population.

[0006] One example of a war game popular with the civilian population is paintball. Paintball employs a weapon specially designed for the game, which is similar to the fighting weapons, except that the target is hit symbolically, namely: the weapon firing paint-filled capsules, the paint marking the object when it is hit. The game is generally played in a territory specially equipped with various structures such as shelters, dug-outs etc. Vehicles for transportation of the participants may also be available.

[0007] Currently, the game of <<paintball>> and its associated weapon, however, are only adapted to a ground war game.

[0008] In addition to the weapon shooting paint-capsules, there are electronic systems simulating the operation of small arms. Most of them are based on the shot being simulated by a light pulse at the shooter end and the hit indicated by a light sensor installed at the target end. In some of the known systems, laser radiation is used for simulating the shot. An example of the electronic system is the system disclosed in U.S. Pat. No. 4,545,583. This system includes two units consisting of a symbolic target-hit device producing, as the trigger is released, a single pulse or a pulse train of IR radiation focused to form a narrow light beam, and a device sensing the radiation. It is possible for the combatants armed with such units to take aim and shoot at one another, symbolically, like it would be the case with conventional weapons, the earlier hit being recorded as valid by the system's electronic device connected by radio communication means with all the symbolic target-hit devices.

[0009] Known from the U.S. Pat. No. 5,002,490 is a system allowing a safe simulation of air combat between aircraft or <<air-to-ground>> combats. This system is installed on each of the aircraft participating in the fictitious air battle and simulates the aircraft gun or machine-gun fire. The system based, for its operation, on sensing the light from the aircraft being attacked, e.g. the position lights, comprises means for objective detection of a symbolic hit. In response to the hit signal, devices may be actuated which produce different effects (visual, audible, smoke release) to lend realism to the combat.

[0010] Also known in the art is an airborne avionics simulator designed to simulate a high-speed aircraft on board a less expensive aircraft, as described in U.S. Pat. No. 5,807,109. The aircraft to be simulated may be a modern expensive military aircraft whose flight time and servicing also involves great expenses. The inexpensive aircraft, i.e. the simulator carrier, may be a civil airplane or an outdated military aircraft.

[0011] The avionics simulator system includes facilities such as the radar, the radar warning system, the radar countermeasures means, the armament systems and the navigation systems. The airborne avionics simulator may be programmed to follow different scenarios such as <<air-to-air>> and <<air-to-ground>> combats, navigational situations, aircraft system failures.

[0012] The airborne avionics simulator may include communication means for data transmission to another identical aircraft that carries a compatible simulator system. The data transmission enables a group of pilots to cooperate either arbitrarily or in accordance with a certain scenario, or else to have the two possibilities combined. The communication system also may serve to prevent collisions.

[0013] The cockpit of the simulator-carrying aircraft may be modified to simulate the control lever, the throttling device and other features of the specific high-speed aircraft.

[0014] The invention is designed to train and assess the performance of the pilots. It also can be used for game and sport applications.

[0015] While operation of the above systems is less expensive than it is the case when they are used with the modern military equipment, the aircraft, particularly the military ones, still remain very expensive and the majority of civilians cannot afford to purchase them. Strict flight regulations in the airspace, especially in the vicinity of settlements and civil airfields, impose further limitations on the use of the above systems for entertainment purposes.

[0016] Known in the art is an entertainment center for such games as <<laser battle>> or <<laser space battle>>, as disclosed in U.S. Pat. No. 5,114,154, primarily intended for entertainment parks of the Disneyland type.

[0017] The complex covered with a dome to protect it from environmental weather conditions, comprises movable platforms for participants, equipped with laser systems, simulating laser weapons. The platforms make compound circular motions with respect to fixed points, including rises and falls, and rotate about their axes. The participants activate the laser systems and shoot whenever their respec-
tive platforms approach the targets above their heads. The targets simulate "enemy" or "friendly" aircraft or spaceships. To enhance the effect, the game is accompanied by sounds imitating the sound of jet planes or spaceships, the sub-dome space is filled with smoke for better observation of the laser beam. In addition, target hits are automatically detected and the score presented to each participant at the end of the game session.

[0018] The complex mentioned is accessible to the public at large, but the general atmosphere is too artificial and very far from the real air combat, which limits the interest in the game on the part of both the potential players and the spectators.

[0019] The aforementioned analysis of the prior art shows that there is a growing, though yet unsatisfied, demand for entertainment simulating, with a good approximation to reality, the actions based on modern technology.

DISCLOSURE OF THE INVENTION

[0020] It is the object of the present invention to provide a complex for and a method of playing a war game, to create the most vivid impression of real "air-to-air", "air-to-ground" combats.

[0021] According to the proposed invention, the war game complex is adapted to be employed as the place for a war game using symbolic target-hit means. The complex comprises a territory equipped for using means of transport. The complex includes a limited airspace permitted for flights over the territory of the complex, the territory of the complex comprising an airfield for aerial vehicles.

[0022] The use of air space, in most of geographical regions, is subject to certain rules and is strictly regulated to assure the flight safety.

[0023] The presence of a dedicated aerial zone to organize a war game, using aircraft and/or helicopters, makes it possible for anyone who wishes to take part in such a game safely, without interfering with either civil or military aircraft.

[0024] The aerial vehicles intended for the war game, both those forming part of the complex and those left out of it, are stationed on the complex's airfield.

[0025] The complex is equipped with means for the symbolic hitting of the target. The symbolic target-hit means are installed on aerial vehicles and other vehicles simulating the military equipment employed in the war game.

[0026] To carry out a war game, the complex comprises aerial vehicles, including aircraft. The aerial vehicles of the complex are provided with means for the symbolic hitting of the target.

[0027] The complex should preferably comprise military aircraft. The use of such aircraft providing the closest approximation of the mock air combat to the actual warfare stirs up the public’s emotions and produces the effect of a dramatic spectacle, thus drawing the attention both of the players and of the spectators.

[0028] In order that the use of military aircraft should not restrict the circle of potential players, some of the aircraft in the complex provide a separate control of the aircraft and the symbolic target-hit means. Two-seated military aircraft are used for this purpose, one of them being taken by a professional pilot to handle the plane, the other seat equipped with symbolic target-hit controls being assigned to a player who can be engaged in a mock combat and control the pilot's actions.

[0029] The complex comprises aerial vehicles provided with facilities permitting the symbolic target-hit means mounted thereon to be controlled from the ground. This allows participation in the game of persons who cannot tolerate the actual flight conditions of a military aircraft. In order to create an impression of the player's participation in an actual air combat, the complex comprises a ground control station designed as the cockpit of an aircraft, for controlling the symbolic target-hit means installed on the aerial vehicle.

[0030] To extend the scope of the war game, the complex comprises ground means for symbolically hitting an air target, to deliver an "air-to-ground" combat. In this case, at least one of such means is installed on a fighting vehicle or a motor car and can move about the territory of the complex in the course of the war game. The complex also includes ground targets adapted to be symbolically hit from aerial vehicles.

[0031] According to one of the embodiments of the complex, at least part of the complex's area is occupied by the water surface of a sea or lake, and the complex comprises at least one water-based symbolic air target-hit means, to deliver an "air-to-sea" combat. In this case, at least one symbolic air target-hit means is installed on a waterborne vehicle and is capable of moving during the game. The possibility to put up the fight above the sea adds to versatility of the war game, making it more attractive.

[0032] To add competitive and entertainment character to a war game the complex is adapted for the game involving at least two opposing parties, the complex comprising at least two distinctive symbols to distinguish the opposing parties in the war game. The complex territory comprises regions, one per each opposing party, at least one of war game facilities is placed in the each region. The following facilities may be used: ground-based means for symbolic air target-hitting, movable ground-based means for symbolic air target-hitting, ground-based targets for symbolic target-hitting from the aerial vehicles, waterborne means for symbolic air target-hitting. The distinctive symbols may be used for marking at least part of such objects as the regions, the war game facilities, the aerial vehicles.

[0033] For a wider scope of the complex, it is preferred that a proving ground for launching combat missiles from aerial vehicle be fitted out in the complex's territory, comprising air and ground targets. Now the complex comprises combat missiles of the type "air-to-air" and "air-to-ground", installed on aerial vehicles so as to shoot these missiles at the targets on the proving ground. Such facilities enable the war game to be organized for a single participant.

[0034] The complex comprises facilities for filming videofilming the war game, including a video studio fitted out with the radio equipment for receiving and transmitting picture signals.

[0035] It is preferable that video cameras for shooting the film with the player inside the cockpit and the outboard space be installed on aerial vehicles, and the complex
comprise a video studio and means for videofilming the war game simultaneously from several points of the complex, including specialized motor cars and aerial vehicles provided with the equipment for video filming and transmitting picture signals to the video studio.

[0036] It is preferable that the complex comprise a satellite communication system for reception and transmission of images from the Earth's satellite and for TV broadcasting.

[0037] It is also reasonable to possess a spectators' stand and at least one TV monitor to display the war game images transmitted to the video studio for the spectators to watch.

[0038] The war game filming/videofilming facilities, the video studios, the stands for the spectators and the TV monitors all help attract a lot of people to war games played on the complex.

[0039] With the above object in view, in a war gaming method with the war game representing a simulated combat, using at least one aerial vehicle equipped with symbolic target-hit means under control of a player, according to the proposed invention, the game is played on a complex specially designed for it and comprising a territory fitted out as a place for war gaming, using aerial vehicles, and a limited airspace permitted for flights over the territory of the complex. The <<air battle>> war game played on a specially equipped complex including limited airspace permitted for flights does not interfere with air traffic and allows a large number of participants to be involved in the game, both as players and as spectators.

[0040] In the preferred embodiment, at least one air target-hit system selected out of a group of systems as follows: ground stationary, ground movable, water-based, installed on a waterborne vehicle, is introduced additionally into the game. Besides, the game may further include shooting combat missiles installed on aerial vehicles employed in the game, which are aimed at air and ground targets on the proving ground of the complex.

[0041] The additional use of ground- and water-based symbolic air target-hit means in the war game, as well as target shooting, increases the number of players simultaneously participating therein and contributes to the competitive and entertainment aspect of the game, thereby attracting a large number of both the participants and the spectators.

[0042] The competitive nature of the game is most clearly expressed when at least two opposing parties are involved in the game, each party being assigned a distinctive symbol to identify the party, and a particular region of the complex territory, the particular region comprising at least one of the additional symbolic air target-hit means. The distinctive symbols are associated with at least the regions and the aerial vehicles of the corresponding parties.

[0043] Depending on the player's wish, these symbolic air target-hit systems may be controlled either by the players or by the operators of the complex.

[0044] The mock combat is preferably delivered by military aircraft. The use of military aircraft in the game, which provide the best approximation to reality of the mock air combat, stirs up the emotions and attracts both players and spectators to the game.

[0045] According to some of the embodiments of the war game, the aerial vehicle, particularly a military aircraft equipped with symbolic target-hit means, is piloted by a professional pilot, while the player controls the symbolic target-hit means. In this case, the player may control the symbolic target-hit means either from the aerial vehicle in actual flight or from the ground station.

[0046] The war game complex, including airspace for flights over its territory, the aircraft or symbolic target-hit means installed on the aircraft not belonging to the complex and other equipment of the complex, is leased to the gamers.

[0047] The aerial vehicles, installing the means for symbolic target-hit, and getting a flying license involve heavy investments and therefore, it is only a limited circle of people that can afford them. Availability of a complex providing airspace for safe flights of the players and the necessary armament, under lease, removes the above limitations and widens the circle of potential participants.

[0048] Besides, participation of the complex's personnel and professional pilots in the war game, allows the most realistic warfare simulation, essentially regardless of the skill of the players and their number, which also contributes to attracting a large number of people who wish to take part in the game and spectators. The ground control of the symbolic target-hit means on the aerial vehicle attracts people who will or cannot stand the actual flight conditions, such as considerable overloads, thus expanding the circle of potential players.

[0049] In the preferred embodiment of the invention, the war game is filmed/videofilmed, including the video-filming of the players and the space outside each of the aerial vehicles employed in the war game. Different methods of videofilming are possible. In particular, according to one embodiment, the war game is filmed simultaneously from several points in the space of the complex. In addition, especially if the complex occupies a large area, the videofilming of the war game is carried out from the satellite. The recorded video cassettes are offered to the players and to the spectators.

[0050] To enhance the entertainment features of the game, it is displayed on at least one monitor accessible to spectators.

[0051] Furthermore, in order to attract the general public to the war game, its TV and Internet broadcasting is organized.

[0052] To decide the winner in the war game, a jury is appointed. It may include the personnel of the complex, the players' representatives and the spectators.

[0053] It is advisable that the surfaces of the aerial vehicles belonging to the complex be leased for advertising purposes.

[0054] The involvement of the general public in the war game determines the efficiency of advertising campaigns conducted during the game.

[0055] In addition, in order to draw the attention of the general public to the game, it is accompanied by a pool. Besides, a prize fund for the winner is established.

[0056] The aim is further achieved by providing that, in a method of playing a war game representing a battle simulation between at least two opposing parties, each party uses at least one aerial vehicle equipped with symbolic target-hit
means. According to the invention each party is assigned a distinctive symbol, the distinctive symbols being placed at least on the corresponding aerial vehicles, when the game is played at a complex comprising: a territory with an airfield for aerial vehicles, and a limited airspace permitted for flights over the territory of the complex.

[0057] Distinctive symbols of the parties associated with the aerial vehicles may readily be recognized both by spectators and participants of the game, that contributes to the competitive and entertainment aspect of the game, thereby attracting a large number of both the participants and the spectators.

[0058] The presence of a dedicated aerial zone to organize a war game, using aircraft and/or helicopters, makes it possible for anyone who wishes to take part in such a game safely, without interfering with either civil or military aircraft.

[0059] In one embodiment of the method of playing a war game representing a battle simulation between opposing parties, the distinctive symbol is made in the form of a designation selected out of the group: the designation identifying a producer of goods/services, the designation identifying a kind of goods/services of a certain producer. In particular, the distinctive symbol represent itself a trade mark.

[0060] Such an embodiment contributes to push wares of the producer.

[0061] In another embodiment the distinctive symbol is selected out of the group: the state symbol of a state represented by the party, the symbol identifying an army, represented by the party, the symbol identifying a fictitious army.

[0062] Participation of teams, representing different states or armies of different states, makes the war game a kind of international competition. This also attracts people to the war games.

[0063] The aim is further achieved by providing that, in a method of playing the war game, representing combat simulation, using at least one aerial vehicle equipped with symbolic target-hit means controlled by at least one player, according to the invention, the game takes the form of a championship.

[0064] The competition may be staged as an individual and/or team championship. Known schemes of forming the teams and holding the trials are possible.

[0065] The teams may be formed from a plurality of countries, out of national armies or regional military organizations. The teams compete to win the world championship.

[0066] According to one of the embodiments of the invention, the teams represent fictitious armies, say, of commodity and/or service manufacturers aiming to hold advertising campaigns.

[0067] Combination of the popularity of sports competitions and the interest the general public takes in military technology and war games will ensure a high popularity of championships relating to the proposed war game. Now the use of advanced military technology, including modern military aircraft and combat missiles providing the best possible simulation of a mock air combat, stirs up emotions and enhances the entertainment features of the game, whereby a large number of spectators are involved in the war game.

[0068] The regulations of the war game in the championships are established by the championship managers. Here, different symbolic target-hit means described above may be employed. The opposing teams representing different national armies, for example, may use active-duty aircraft of the respective nations, these aircraft being equipped both with identical and with different symbolic target-hit means.

[0069] Filming/videofilming and radio/TV broadcasting of the championship is organized, apart from the on-line demonstration for the spectators on at least one monitor and advertising in the course of the games.

BRIEF DESCRIPTION OF THE DRAWINGS

[0070] The invention will be further illustrated by its embodiments with reference to the accompanying drawings in which:

[0071] FIG. 1 is a perspective view of the war game complex;

[0072] FIG. 2 is a schematic of the symbolic target-hit system as part of the equipment of the war game complex;

[0073] FIG. 3 is a schematic lay-out of the war game complex.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0074] FIG. 1 shows a specially fitted-out territory 1 adapted for a war game, using aerial vehicles. Forming a vault over the territory 1 is a flight airspace 2 limited horizontally by the boundaries of the complex's territory 1 and extending upwards to a height authorized for the specific location of the complex and approved by the government authorities concerned.

[0075] During the game, the players may execute maneuvers on aerial vehicles within the airspace 2. The required dimensions of the airspace depend on the specific aerial vehicles used in the war game, for example, when using jet planes, it is preferred that the airspace 2 of the complex be at least 10 km long, 10 km wide and 3 km high. With small propeller-driven planes or helicopters, it should be at least 3 km by 3 km horizontally and 500 m vertically. The complex may have a substantially larger area and consequently, more extensive airspace, provided the location allows.

[0076] The complex comprises an airfield 3 having a runway 4. Several runways may be available for use in the airfield.

[0077] The airfield 3 is equipped with conventional airfield facilities, including the landing system, the radar system, the automatic radio direction finder, the light-signaling system, the meteorological equipment etc. The fitting-out of the airfield is accomplished in a manner apparent to those skilled in the art, according to the airfield functions and depending on the aircraft or other aerial vehicles served.

[0078] The complex may be either built a new or based on an existing but inactive civil or military airfield.
A no-airfield embodiment of the complex is also possible, the airfield providing facilities for the take-off of the gaming aircraft being located beyond the territory of the complex.

In any of the embodiments, the complex is equipped with war game control facilities, including, for example, a control tower 5 provided with conventional airfield facilities for controlling the air traffic. As an alternative, an aerial vehicle equipped with a control system, such as AWACS, may be used for controlling the flights and the war game.

The complex comprises aircraft 6 or other aerial vehicles, such as helicopters, to deliver mock combats, including <<air-to-air>>, <<air-to-ground>> and <<air-to-sea>> combats.

In one of the embodiments, the complex for the war game is designed for the use of high-speed military aircraft. In this embodiment the complex comprises, e.g., aircraft equipped with the state-of-the-art avionics, such as Russian fighters MIG-29, SU-33; US AF fighters: F16 Falcon, of Lockheed Corporation, and F15 Eagle, of McDonnel Douglas Co, French-made fighter Mirage 2000, and British-made Harrier. Other options are less powerful and lighter aircraft, such as the Russian MIG-AT or French aircraft CAP of Mudry, as well as outdated military aircraft.

The complex designed for war games on high-speed military aircraft is located at a distance from civil airfields, outside the active air corridors and away from populated localities.

In another embodiment of the invention, the war game complex is designed to employ small civil aircraft with flight speeds ranging from 100 to 300 km/hr, or helicopters, and is provided with a short runway required for such aircraft. Such a complex may have a compact flight airspace limited horizontally by the line-of-sight range as viewed from the center of the complex, and vertically, by heights within 200 to 300 m, so that the flights are always below the clouds. The advantages of this embodiment of the complex are the maximum entertainment character of the simulated air combat, a relatively low cost of the flight time and the eventual deployment of such complexes in urban recreation zones. In the compact version, the war game complex preferably comprises several aircraft such as Russian AN-24, AN-38, Aero Commander, of Rockwell Co. (USA), that are capable of participating in the war game simultaneously.

The complex comprises symbolic target-hit means designed, for example, in a way similar to the system disclosed in U.S. Pat. No. 5,002,490, which may simulate an airborne aircraft gun on the aircraft 6 of the complex. The system is also fit for mounting on war-game aircraft that are not part of the complex, but rather belong to players or their employers. Hereinbelow, the aircraft which are not part of the complex, are referred to, if necessary, as <<guest>> aircraft.

FIG. 2 shows a symbolic target-hit system as disclosed in U.S. Pat. No. 5,002,490 including a shooting device 7 mounted on the attacking vehicle and a target device 8 mounted on the target vehicle. The device 7 comprises an optical sight 9 and an electric <<on>> switch 10 simulating the trigger action of the gun, which is pressed whenever the target is within the field of view of the optical sight 9. The device 7 also includes a photosensitive detector 11 positioned in the focal point of the optical sight 9, a power source 12, a target-hit detection device 13 and a radio-transmitter device 14. The operation of the <<on>> switch 10 closes the electric circuit from the power source 12 through the detector 11 and to the device 13. The device 13 generates an electric target-hit signal, if during the closure of the <<on>> switch 10, a radiation from the target with its power no less than that specified falls on the detector 11 through the optical sight 9.

In addition, the standard sight of a military aircraft or other fighting vehicle with its field of view aligned to that of the optical sight 9, as disclosed in U.S. Pat. No. 5,002,490, may be employed for visual sighting.

The device 8 comprises a radiation source 15 providing radiation from the target, a radio receiver device 16 and a smoke generator 17. The target-hit signal from the device 11 is transmitted from the radio transmitter device 14 to the radio receiver device 16 which, in turn, actuates the smoke generator 17 simulating the target hit. The maximum symbolic hit range provided by the system can be controlled by changing the power of the radiation source 15 and the light-gathering power of the optical sight 9.

Both the attack device 7 and the target device 8 are installed on each of the war-game aircraft so that the aircraft may serve as the target to be attacked.

Instead of the symbolic target-hit system of U.S. Pat. No. 5,002,490, or in addition to that, a system described in U.S. Pat. No. 4,545,583 and other known systems of the kind, or systems using methods known to those skilled in the art, including combinations of the same, may be used to equip the complex with the aircraft 6.

An aircraft simulator system such as that described in U.S. Pat. No. 5,807,109, may be installed on some of the aircraft 6 of the complex.

The cockpit of a civil aircraft may be re-equipped to simulate a military aircraft cockpit. Some of the aircraft 6 provide a pilot’s seat and a player’s seat provided with controls for controlling the symbolic target-hit means.

The aircraft 6 may also be equipped with alternative symbolic target-hit means, including small-range <<air-to-air>> missiles such as AIM-9L <<Sidewinder>> adapted to the symbolic hitting of an air target. The adaptation of the missiles may employ a scheme known to those skilled in the art, such as the removal of the charge from the warhead and its replacement, say, by a radio transmitter for transmitting a destruct signal from the missile warhead blasting system to the aircraft being attacked, this signal being used for detecting the hit on board the aircraft. The missile warhead blasting system must be adjusted to generate the destruct signal at a safe distance from the target, determined by the missile parameters. In the re-equipped missile, the destruct signal is used to produce a control command for adjustment of the vanes to one of the extreme positions, in order to prevent the missile from colliding with the aircraft attacked.

FIG. 3 illustrates the layout of the war game complex. On at least one aircraft 6, the symbolic target-hit system is adapted to be controlled from the ground. In the preferred embodiment, it is controlled from a ground control
station 18 with its interior resembling an aircraft cockpit. The glass of the cockpit at control station 18 is replaced by monitors made to display the view from the cockpit of the aircraft 6 on which the symbolic target-hit system controlled from the station 18 is installed. The control station 18 and the aircraft 6 carrying the symbolic target-hit system are provided with known communication means for transmission, from the aircraft 6 to the control station 18, of the view from the aircraft cockpit and the sighting field of vision, as well as the hit signals and the sound from the cockpit of this aircraft, and, inversely, for transmission from the control station 18 of signals corresponding to the instants of hypothetical shots.

0095] The complex comprises ground-based symbolic air target-hit means, namely: stationary antiaircraft guns 19 and mobile antiaircraft guns 20 installed on fighting vehicles or motor cars. To attack the war gaming aircraft from the ground, the antiaircraft guns 19 and 20 are provided with the same symbolic target-hit systems as those mounted on the aircraft 6, or compatible with them, e.g. the devices 7, 8 represented in FIG. 2.

0096] Single-out within the territory 1 of the complex are regions 21 and 22 separated from the airfield and assigned each to one of the opposing parties in the war game as a territory belonging to this particular party. The boundaries of the regions 21, 22 are indicated as dash-dot lines in FIG. 3. If more than two opposing parties take part in the specific war game, regions for each of them may be defined within the territory 1 of the complex.

0097] Each opposing party is provided with distinctive symbol to mark regions 21, 22 and the aerial vehicles 6. Boundaries of the regions 21, 22, for instance, are marked with banners bearing the distinctive symbols of the parties, the aerial vehicles 6 being provided stickers with corresponding distinctive symbols.

0098] The complex also comprises targets 23 located in the regions 21, 22 for being symbolically hit from air. The target 23 comprises the device 8 (FIG. 2) or another hit-detection means compatible with at least one of the symbolic target-hit means installed on the aircraft 6 or the <=air-to-air=> aircraft. Apart from the smoke generator 17, the target 23 may include a pyrotechnic burst imitation device operating in response to a symbolic target-hit. The targets 23 may take the form of different ground structures or military equipment's.

0099] In one of the embodiments, the regions 21, 22 are provided with masking facilities (not shown), such as masking nets, for concealment of the antiaircraft guns 19, 20 and the targets 23.

0100] According to one of the embodiments, at least part of the territory 1 of the complex is occupied by a water surface 24 of a reservoir such as ocean or lake, wherein airborne target-hit means compatible with the ones installed on the aircraft 6 in the war game, such as the aforementioned devices 7, 8. The antiaircraft guns 25 may be installed either on a waterborne vehicle, such as the submarine (the underwater vehicle), or on a platform secured to the bottom, as stationary units. Specifically, the entire territory of the complex may be a water surface, the airfield lying beyond the limits of the complex, on shore. Alternatively, an aircraft-carrying battleship adapted to the war game may serve as the airfield.

0101] In one of the embodiments, the complex comprises a proving ground 26 for shooting operational missiles located in that part of the complex which is remote from the airfield 3. The complex comprises ground targets 27 and unmanned air targets 28, such as warhead-free winged missiles and <=air-to-air=> and <=air-to-ground=> combat missiles that are installed on gaming aircraft or other aerial vehicles adapted to carry combat missiles.

0102] The complex is equipped with communication means for interconnection of the players and their connection to the control tower 5.

0103] The resources for delivering a mock combat, at the disposal of the war game complex, installed both on aerial and on ground or waterborne vehicles, are not restricted to the above examples. The complex may further include any of the known armaments adapted to symbolic target-hitting or simulation of these armaments, such as aerial bomb simulators, provided they can be safely used in war gaming.

0104] The complex also includes the war game filming/videofilming equipment. In the simplest embodiment, the complex comprises conventional video cameras such as those employed for camera shooting, or video cameras installed on racing cars of formula 1. The video cameras are also installed on the aircraft 6 of the complex, or they are mounted, prior to the game, on guest aircraft, allowing the players and the outboard space to be filmed in the course of the combat.

0105] In the preferred embodiment of the invention, the complex comprises a video studio 29 equipped with a radio equipment for receiving and transmitting picture signals, and all the war-game videofilming points, including the war gaming aircraft are provided with equipment for transmitting the picture signals to the video studio 29.

0106] Additionally, the videofilming points are located on ground transportation vehicles 30 and aerial vehicles 31 specially designed for the war-game videofilming, which can move about the territory 1 and in the airspace 2 of the complex, respectively for simultaneously taking the battle picture at different camera angles.

0107] In the preferred embodiment, the complex also includes a space communication equipment for receiving and transmitting the complex's images from the satellite and TV broadcasting of the war game from the video studio.

0108] The complex comprises spectator's stands 32. The stands 32 are located in proximity to the airfield 3 and oriented such as to allow the spectators the best possible view of the war game.

0109] The territory 1 of the complex further comprises stands 33 with a view of positions of the targets 23 and the antiaircraft guns 19, 20, and a view of the proving ground 26. To assure the safety of the spectators in the event of using <=air-to-air=> missiles in the game, the stands 33 are fitted out as shelters protected from above. The stands may also be located outside the territory of the complex, in any place accessible to the picture signal from the complex.

0110] The war gaming complex is equipped with TV monitors in full view of the public on the stands 32, for
displaying the image of the war game, as it is being filmed. The image is transmitted to the monitors 34 from the video studio 29.

[0111] In one of the embodiments, on the outer surfaces of the aircraft 6 of the complex and on the inner surfaces of their cockpits that are free from controls, there is provided space for advertisements in picture and letter form. In this embodiment, the complex also provides advertisement-bearing clothing for the players.

[0112] The complex includes pool stake reception posts in which the spectators may stake money on the winning result of any of the opposing parties. The complex also comprises electronic facilities for receiving, the stakes and paying out the prize money over the worldwide computer network.

[0113] Different methods of organizing and playing the war game now follow.

[0114] According to the invention, the war game simulates a combat, using at least one aerial vehicle, preferably an aircraft.

[0115] In one of the embodiments, the war game is played on a specially equipped complex such as the one described above. The gaming management admits any persons desiring to participate either individually or as part of a team. The whole or part of the territory 1 of the complex and the whole or part of the overlying airspace 2, respectively (FIG. 1), is leased to the gamers for a specified time. The gamers lease the aircraft 6 of the complex, equipped with symbolic target-hit means, or use the guest aircraft carrying the symbolic target-hit means being at the complex’s disposal.

[0116] An aerial vehicle, such as aircraft, together with a professional pilot may be offered, on request, to the gamer. Such embodiment is preferable, if military aircraft are employed in the game. In this case, the aircraft has a seat for the pilot and a seat for the player which is provided with controls for controlling the airborne symbolic target-hit means. In flight, the gamer controls the symbolic target-hit means, whereas the professional pilot handles the aircraft.

[0117] An aerial vehicle such as the military aircraft piloted by a professional pilot, wherein the symbolic target-hit means is ground-controllable, may be made available for the player. The player is in the ground control station 18 fitted-out as an aircraft cockpit. He controls the symbolic target-hit means of an aerial vehicle in actual flight. Such a pattern of war gaming may be practised by players who will not or cannot meet the conditions of the actual flight, e.g. substantial overloads. The aircraft-cockpit configuration of the ground control station 18, with the possibility to transmit the image from the aircraft, creates the sensation of an actual battle environment in the player. To enhance this sensation, the sounds from the cockpit of the aircraft in flight are radio broadcast and reproduced in the ground control station.

[0118] Depending on the specific game embodiment preferred by the participants, other facilities at the complex’s disposal, such as the targets 23, the ground-based anti-aircraft guns 19, 20 and/or the waterborne anti-aircraft guns 25 are leased to the players, apart from offering a paid service, namely: a possibility to shoot combat missiles at the ground targets 27 and the air targets 28 on the ground 26.

[0119] The anti-aircraft guns 19, 20, 25 may be controlled both by the players of the participating teams and by the complex’s personnel. The latter circumstance allows the war game to be organized for an individual player.

[0120] The regions 21, 22 of the territory 1 of the complex with the targets 23 and the anti-aircraft guns 19, 20 disposed therein, respectively, are assigned to the opposing parties. The participants are allotted distinctive symbols which mark the regions 21, 22 assigned to the respective parties, for example, flags carrying appropriate symbols which are also put on aerial vehicles and other facilities employed in the war game.

[0121] The filming and/or videofilm of the war game is organized within the complex. Installed on the aerial vehicles used in the mock combat are video cameras which allow the videofilm, in the course of the game, of both the outboard space and the player in the cockpit. The recorded video compact cassettes are given to the players and to the spectators, as a souvenir.

[0122] The game is demonstrated to the spectators on the monitors 34 of the complex. To decide the winner, an umpire from the complex’s personnel or an impartial jury may be invited.

[0123] The participants choose the resources they are going to use in the game, in accordance with the resources chosen, approximate game regulations are presented to the players, which they may either follow or draw up, based thereon, their own regulations which must include mandatory limitations relating to safety. Such limiting factors include, among others, an official pilot’s qualifying certificate for players who wish to pilot the aircraft on their own, observance of the air-space boundaries, the minimum distance of approach between the aircraft and the minimum flying height. The exact values of the limitations are specified depending on the kind of the aerial vehicles and other armaments.

[0124] In the preferred embodiment, the war game is played between two opposing parties, either of which is represented by a single player or teams of players. The parties employ each one or more aircraft 6 equipped with symbolic target-hit systems. All the players are provided with communication means to establish a mutual contact, as well as the necessary services of the complex. As mentioned above, it is also possible to simulate the combat for a single player or for two opposing players, so that each of them, in addition to controlling the symbolic target-hit system, is the leader of a team from the complex’s personnel who control the ground-based and/or waterborne symbolic target-hit systems assigned to the player.

[0125] A permanent radio communication is established for the player to get in touch with the personnel team subordinate to him.

[0126] Depending on the choice of the participants and the equipment available, the combat is held on small civil aircraft or on military aircraft. The use of other aerial vehicles such as helicopters is also possible.

[0127] Implementation of the war game is illustrated by the following example of a combat between two players. Each player controls a symbolic target-hit means in the cockpit of the aircraft 6 piloted by a professional. The region 21 is assigned to the first player and the region 22 to the second player.
Each player is provided with a distinctive symbol. For example, first player is given the symbol representing an image of the green tiger and the inscription GREEN, the second player being given the symbol representing an image of a yellow tiger and the inscription YELLOW. The boundaries of the regions 21, 22 are marked by means of installation of banners with the images of green and yellow tigers respectively. The aircraft of the players are marked with stickers having the same images. The players are provided suits of yellow and green colors etc.

The regions contain each two targets 23 and can antiaircraft gun 20, their symbolic target-hit systems being controlled by the complex's personnel. The duration of the game is limited by a period of, say, one hour. According to regulations, each of the players must primarily, hit targets, i.e. the target devices 23 and the antiaircraft gun 20 located in the region assigned to the enemy. The aircraft with the players take off from the airfield of the complex and attack the targets 23 and the antiaircraft guns 20 in the regions 21 and 22 respectively. The player who has hit the targets 23 and the antiaircraft gun 20 has the right to attack the aircraft 6 of another player. The game regulations may stipulate scoring points for hitting the targets, including the enemy aircraft 6. The player who has scored more points is recognized as the winner.

It is evident that the game, depending on the versatility of the equipment used, may obey much more sophisticated rules with a plurality of different versions of such rules possible.

One of the embodiments of the combat simulation method is the advertising campaign. The teams participating in the game, i.e. competing commodity and/or service manufacturers, or competing trade marks. Distinctive symbols of the commodity/service manufacturers, including their firm’s own names and trade marks, are applied to the gaming equipment and the regions of the complex assigned to the teams etc., are marked by them. The game is TV broadcast and displayed on the complex monitors for the spectators on the stands. Demonstration of the game in the Internet is another feature.

Another embodiment of the war gaming method is holding war-game championships, including an international championship. Any of the known world championship schemes are used, including elimination trials.

The contest is held to win an individual and/or team championship. It is possible to hold competitions in the territory of the above complex, using the aircraft 6 belonging to the complex or to the contest managers, i.e. the guest aircraft, equipped with symbolic target-hit means. The war game is played in accordance with the regulations approved by the championship managers, the game regulations and the target-hit means described above being one of the alternatives.

Boundaries of the regions 21, 22, aircraft and other game facilities are marked either with the symbol of the state represented by the team participating in the war game, or with the symbol of corresponding army.

Since the proposed embodiment of the war gaming method preferably implies the participation of professional pilots, this assumes, correspondingly, the use of modern armaments adapted to the war game.

Various patterns of holding individual and team world championships are possible. According to one of the embodiments, there is formed, within the nation, a plurality of teams, for example, from different territorial districts or different clubs etc., that compete to win the national championship, followed by regional or continental championships (i.e. All-European, All-African, All-American, All-Asian) and the international championship.

According to another embodiment of the method, the championship is held between servicemen of different national or regional armies. This also implies winning both the individual and the team championship. The teams consist of military men from those service arms that are required by the regulations, including pilots and servicemen of land and/or naval arms. The war game between the teams of national armies predominantly employs modern military aircraft equipped with symbolic target-hit means of specified performance. The championship stages are radio and TV broadcast and transmitted to monitors for the spectators on the complex's stands. Individual stages of the championship may also be demonstrated in the Internet.

Still another war game embodiment, in the form of a championship, is a series of competitions between the representatives of fictitious armies, such as those representing commodity and/or service manufacturers. The purpose of holding such championships is an advertising campaign.

In all the above embodiments of managing and realizing a war game, particularly when holding war game championships, a pool may be organized in the course of the game. The bets may also be accepted in the Internet.

Free space on the military equipment, including aerial vehicles, and the territories of the complex are leased for the placement of advertisements.

The above examples of the embodiments serve solely to illustrate the invention, and shall not be considered as limiting the scope of the present invention as defined by the following claims.

1. A complex adapted to be employed as the place for a war game using symbolic target-hit means, the complex comprising a territory (1) equipped for using means of transport, characterized in that the complex includes a limited airspace (2) permitted for flights over the territory of the complex, the territory (1) comprising an airfield (3) for aerial vehicles.
2. The complex of claim 1 characterized in that it comprises symbolic target-hit means.
3. The complex of claim 2 characterized in that it comprises at least one aerial vehicle (6) with at least one of the symbolic target-hit means (7, 8) mounted thereon.
4. The complex of claim 3 characterized in that the aerial vehicle (6) is an aircraft.
5. The complex of claim 4 characterized in that the aircraft represents a military aircraft.
6. The complex of claim 3, characterized in that at least one aerial vehicle (6) comprises a pilot's seat and a players seat, the player's seat being equipped for controlling the symbolic target-hit means.
7. The complex of claim 4 characterized in that at least one aerial vehicle (6) has mounted thereon ground-controllable means for symbolic target hitting.
8. The complex of claim 7 characterized in that it comprises a ground station (18) for controlling the target-hit means installed on the aerial vehicle, which is fitted-out as the vehicle’s cockpit.

9. The complex of claim 2 characterized in that the symbolic target-hit means include at least one “air-to-air” missile re-equipped for the symbolic hitting of a target.

10. The complex of claim 2 characterized in that the symbolic target-hit means include at least one ground-based means (19) for symbolic air target-hitting, to deliver the “air-to-ground” combat.

11. The complex of claim 10 characterized in that at least one ground-based means (20) for symbolic air target-hitting is made movable.

12. The complex of claim 1 characterized in that it comprises ground-based targets (23) for symbolic target-hitting from the aerial vehicles (6).

13. The complex of claim 2 characterized in that at least part of the territory of the complex is occupied by a water surface (24), the symbolic target-hit means include at least one waterborne means (25) for symbolic air target-hitting, which is designed to deliver an “air-to-sea” combat.

14. The complex of claim 13 characterized in that at least one waterborne symbolic air target-hit means (25) is installed on a waterborne vehicle.

15. The complex of claim 1 characterized in that it comprises a proving ground (26) for launching combat missiles from the aerial vehicles (6), “air-to-air” and “air-to-ground” combat missiles, and air and ground targets (27, 28) for these missiles.

16. The complex of claims 3, 10, 11, 12, 13, characterized in that it is adapted for war game involving at least two opposing parties, the complex comprising at least two distinctive symbols to distinguish the opposing parties in the war game, the complex territory comprises regions (21, 22), one per each opposing party, at least one of war game facilities is placed in the each region, the war game facilities being selected out of the group: ground-based means (19) for symbolic air target-hitting, movable ground-based means (20) for symbolic air target-hitting, ground-based targets (23) for symbolic target-hitting from the aerial vehicles, waterborne means (25) for symbolic air target-hitting, the distinctive symbols being adjusted to be associated with at least one object selected of the group: the region, the war game facility, the aerial vehicle.

17. The complex of claim 1 characterized in that it comprises means for filming/videofilmming the war game.

18. The complex of claim 17 characterized in that installed on the aerial vehicles are video cameras for filming the player in the cockpit and the outboard space.

19. The complex of claim 17 characterized in that it comprises a video studio (29) provided with radio equipment for receiving and transmitting picture signals.

20. The complex of claim 17 characterized in that it comprises ground transportation vehicles (30) and aerial vehicles (31) intended for videofilmming the war game, which are provided with the equipment for videofilmming and transmitting picture signals to the video studio.

21. The complex of claim 19 characterized in that it is equipped with a satellite communication system for receiving and transmitting images from the Earth’s satellite and TV broadcasting.

22. The complex of claim 1 characterized in that it comprises stands (32, 33) for spectators.

23. The complex of claim 22 characterized in that it comprises at least one TV monitor (34) for demonstration of the war-game images adjusted for watching by the spectators from stands (32, 33).

24. The complex of claim 3 characterized in that its territory (1), and the aerial vehicles (6) comprise surfaces for placing advertisements thereon.

25. The complex of claim 1 characterized in that it includes means for accepting money stakes on games played in the complex.

26. A method of war gaming representing a battle simulation, using at least one aerial vehicle (6) equipped with a symbolic target-hit means controlled by a player, characterized in that the game is played on a complex specially designed for it and comprising a territory (1) with an airfield (3) for aerial vehicles, and a limited airspace (2) permitted for flights over the territory of the complex.

27. The method of claim 26 characterized in that the war game employs at least one additional symbolic air target-hit means selected out of the group: ground-based stationary means (19), ground-based movable means (20), waterborne means (25), the additional symbolic air target-hit means being placed at the territory of the complex.

28. The method of claim 27 characterized in that at least two opposing parties are involved in the game, each party being assigned a distinctive symbol to identify the party, and a particular region (21, 22) of the complex territory, the particular region comprising at least one of the additional symbolic air target-hit means, the distinctive symbols being associated with at least the regions (21, 22) and the aerial vehicles of the corresponding parties.

29. The method of claim 26 characterized in that at least one aerial vehicle (6) comprising a pilot’s seat and a players seat, the player’s seat being equipped for controlling the symbolic target-hit means, the aerial vehicle being piloted by a professional pilot, while the player controls the symbolic target-hit means.

30. The method of claim 26 characterized in that at least one aerial vehicle (6) has mounted thereon symbolic target-hit means controllable from a ground control station at the territory (1) of the complex, the aerial vehicle being piloted by a professional pilot, while the player controls the symbolic target-hit means from the ground control station.

31. The method of claim 26 characterized in that at least one aerial vehicle is an aircraft.

32. The method of claim 26 characterized in that the airspace for flights over the complex’s territory is leased.

33. The method of claim 26 characterized in that the complex comprises a proving ground (26) for launching combat missiles, and the game includes trial shooting at air and ground targets (28, 27) using “air-to-air” and “air-to-ground” combat missiles installed on aerial vehicles employed in the game.

34. The method of claim 26 characterized in that the war game is filmed/videofilmed.

35. The method of claim 34 characterized in that in the course of the game, there is videofilmming of both the players and the space outside each aerial vehicle used in the war game.

36. The method of claim 34 characterized in that the videofilmming of the war game is carried out from several points simultaneously.
37. The method of claim 34 characterized in that the videofilming of the war game is carried out from the Earth's satellite.

38. The method of claim 34 characterized in that the game is TV broadcast.

39. The method of claim 34 characterized in that the game is demonstrated on at least one ground monitor (34), the ground monitor being adjusted for watching by the spectators from stands (32, 33), the stands being placed at the territory (1) of the complex.

40. The method of claim 26 characterized in that the territory (1), and the surfaces of the complex's aerial vehicles are leased for the placement of advertisements.

41. The method of claim 26 characterized in that the war game is accompanied by organizing a pool.

42. The method of claim 26 characterized in that a jury is formed to decide the winner.

43. The method of claim 26 characterized in that a prize fund intended for the winner of the game is established.

44. A method of playing a war game representing a battle simulation between at least two opposing parties, each party using at least one aerial vehicle (6) equipped with symbolic target-hit means, characterized in that each party is assigned a distinctive symbol, the distinctive symbols being placed at least on the corresponding aerial vehicles, the game being played at a complex, the complex comprising:

   a territory (1) with an airfield (3) for aerial vehicles, and
   a limited airspace (2) permitted for flights over the territory of the complex.

45. The method of claim 44 characterized in that the distinctive symbol is made in the form of a designation selected out of the group: the designation identifying a producer of goods/services, the designation identifying a kind of goods/services of a certain producer.

46. The method of claim 45 characterized in that the distinctive symbol represent itself a trade mark.

47. The method of claim 44 characterized in that the distinctive symbol is selected out of the group: the state symbol of a state represented by the party, the symbol identifying an army, represented by the party, the symbol identifying a fictitious army.

48. The method of claim 44 characterized in that each party is assigned a region (21, 22) of the territory of the complex with at least one symbolic air target-hit means selected out of the group: ground-based stationary means (19), ground-based movable means (20), airborne means (25), at least said regions being designated with the corresponding distinctive symbols of the parties.

49. A method of playing a war game representing a battle simulation, using at least one aerial vehicle (6) equipped with symbolic target-hit means controlled by at least one player, characterized in that the game takes the form of a championships being run on a complex comprising:

   a territory (1) with an airfield (3) for aerial vehicles, and
   a limited airspace (2) permitted for flights over the territory of the complex.

50. The method of claim 49 characterized in that the championship is held in the form of an individual competition.

51. The method of claim 49 characterized in that the championship is held in the form of a team competition.

52. The method of claim 51 characterized in that teams are formed to represent a plurality of nations, and the teams compete to win the world championship.

53. The method of claim 51 characterized in that teams are formed from national armies of a plurality of countries, and the teams compete to win the world championship.

54. The method of claim 51 characterized in that teams are formed from regional military organizations.

55. The method of claim 51 characterized in that teams represent fictitious armies.

56. The method of claim 49 characterized in that the war game employs at least one additional symbolic air target-hit means selected out of the group: ground-based stationary means (19), ground-based movable means (20), airborne means (25), the additional symbolic air target-hit means being placed at the territory (1) of the complex.

57. The method of claim 49 characterized in that the game is TV broadcast.

58. The method of claim 49 characterized in that the game is demonstrated on at least one ground monitor (34), the ground monitor being adjusted for watching by the spectators from stands (32, 33), the stands being placed at the territory (1) of the complex.