



2018 LICENSED PRODUCT GUIDE

NEWCOMER ARMS, LLC



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Introduction

In collaboration with the Department of Defense, Newcomer Arms has secured the manufacturing licenses for a variety of defense, utility, civilian, military, ammunitions, and technology products. These products have been developed by the U.S. government with the specific agenda of advancing the markets forward. Newcomer finalized its licensing agreements with the Department of Defense over the course of 2017, which places the company as the sole manufacturing and distribution group for these products. This document details the technologies that Newcomer is proud to add to its production line in 2018. Manufactured in the United States, these products shall be distributed to both the domestic and international markets.

With a strict focus on the manufacturing division, Newcomer Arms has also launched its research and development program. This program gives special attention to NCA 3D, a fully interactive, three dimensional, augmented reality capable, mechanical training and execution software manual that is fully adaptable to any piece of equipment. Details of NCA 3D can be found within this document.



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I. NCA 3D: Software

NCA 3D is a digital, automatically updating, interactive, and three dimensional manual that is adaptable to any piece of equipment. NCA 3D features Augmented Reality capabilities, minimizing training and maintenance time without having language barriers.



Through our dealings with private contractors, manufacturers and governments, we found a need for improving the maintenance process of vehicles, aircraft, weapons systems and medical equipment. In response, our team has developed a ground-breaking software.

NCA 3D is an advanced, intuitive collection of applications that provides your maintainers with step-by-step virtual guides, three dimensional animations, detailed wiring diagrams and much more. Using multiple media platforms, NCA 3D will be the next generation of tool and machinery maintenance, trouble shooting, training and manufacturing process plans.

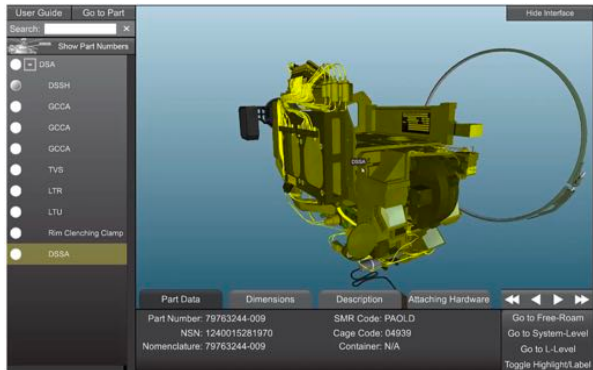
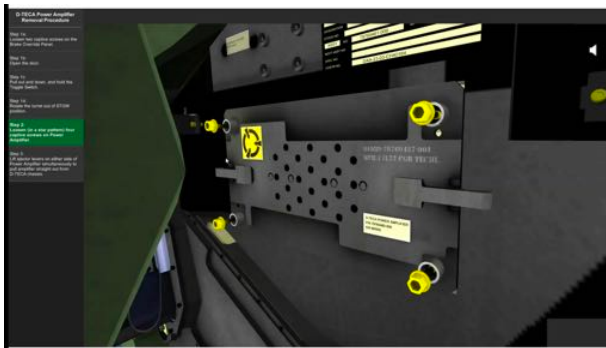
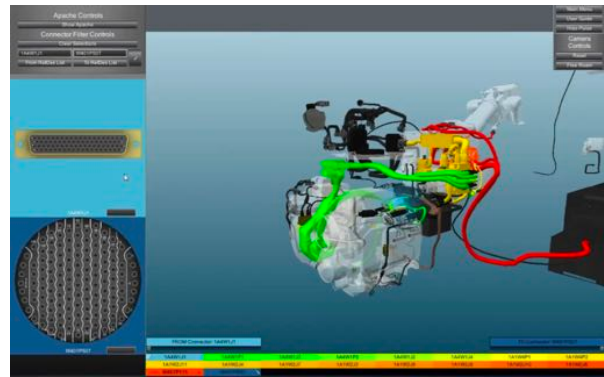
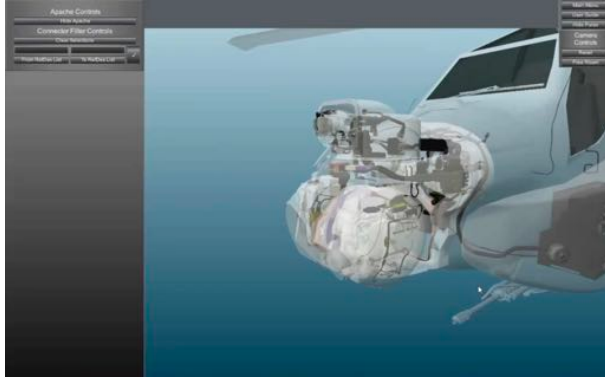
KEY FEATURES

- Any source data can be repurposed and published for multiple requirements
- Reduces training and maintenance time by more than **50%**
- Elimination of language barriers
- Meets corporate objectives by supporting unit readiness and improving training/education
- Tablet and laptop friendly

| Replace Task | Foreign Student (Avg NCA3D time) | Traditional Avg Time* | % Reduction |
|------------------|-------------------------------------|-----------------------|-------------|
| DTECA | 11 min | 40 min | 73% |
| MPTUR | 16 min | 40 min | 60% |
| MPEU | 7 min | 15 min | 53% |
| NS SHROUD | 4 min | 8 min | 50% |



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II. WASP: Water Assessment and Purification Toolkit

WASP is a man-portable, adaptable and integrated reverse osmosis (RO) water purification, with electro-chlorination, UV sanitation, and a remote water monitoring capability.



The system uses the ERDC GRL Geosense Team's geo-enabled digital data collection with GEONETS and the water quality WaterDOG/IWQAS-P sensing modality. The current WASP system was designed and conceived developed by the U.S. Army Corps of Engineers (USACE) Engineer Research and Development Center (ERDC) Geospatial Research Laboratory (GRL) Geosense Team and the first prototypes were developed in collaboration with the Army's Advanced Design and Manufacturing Facility. The CONOPS for the system would be for a Small Unit or Special Forces team to provide safe water in austere environments.

Water Quality Sensors

- Power of Hydrogen, pH
- Oxidation-Reduction Potential, ORP
- Dissolved Oxygen, DO
- Conductivity
- Temperature
- Total Dissolved Solids, TDS
- Chloride
- Turbidity

Benefits

- Real-time color coded indicators
- Exportable data logs
- Reverse osmosis
- Bleach that is produced may be used for water sanitation or other decontaminating efforts.
- Output through Bluetooth or WiFi



III. Modular Protective System - Multipurpose Guard Tower

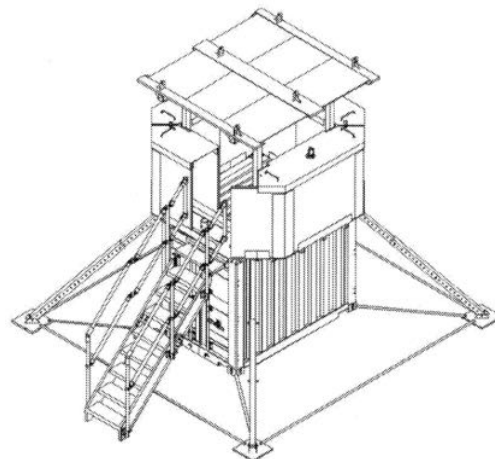
A lightweight, rapidly constructed guard tower system for expedient deployment in remote locations with protection against small arms and blast threats.

When we send our men and women to war, we owe them equipment designed to keep them as safe as humanly possible and that enhances their ability to accomplish the mission. The Modular Protective System (MPS) Multipurpose Guard Tower satisfies these requirements with a lightweight, rapidly-constructed protection system that can be expediently deployed in remote locations and accommodate crew-served weapons systems. This unique, government patent-pending guard tower was developed by the U.S. Army Corps of Engineer Research and Development Center (USACE-ERDC). Developed under the Deployable Force Protection Program, this effort enhances soldier protection on small contingency bases while also providing next generation designs to accommodate maneuvers against enemy attacks.

The MPS Multipurpose Guard Tower is capable of providing over watch for entry control point and perimeter protection. The system can be configured as an elevated guard tower, mounted on its Quadcon container, or positioned for ground-level fighting. Protection is provided by a multi-layered armor panel system that allows security demands to be tailored based on the threat level. Protection capabilities against small arms, indirect fire and blast threats for the system have been validated through laboratory and field demonstrations.

Benefits

- A five-man team can construct the elevated guard tower, or disassemble and repack it, in just two hours without special tools or equipment. Lightweight and compact, MPS Multipurpose Guard Tower units are stowed and transported in a Quadcon by truck, ship, or sling loaded under a helicopter for rapid transport.





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IV. Ruck Dock

The Ruck Dock is a load carriage connector system designed to enable rapid mounting and demounting of personal load bearing equipment.

The Ruck Dock consists of two mating halves that allow connection under various angles of approach. Despite a heavy load, or being unable to view the connector orientation, the end-user can reliably and quickly couple and decouple the system. A military mounting system (the MOLLE) was devised to improve on the lack of customization encountered with standardized rucksacks. While the MOLLE system does allow for increased user customization, it does not empower the user to rapidly configure gear with changes in an activity or mission.

The Ruck Dock improves the speed in which the entire load carriage system is donned and doffed. Rucksacks and tactical vests that both incorporate load-bearing belts can be coupled together into a single device.

Benefits

The Ruck Dock will benefit civilians and military personnel who wear heavy backpacks (campers, rangers, firefighters, hikers, deployed soldiers, etc.). The system allows an end-user to efficiently and evenly distribute the weight of a load and transfer it from the shoulders and spine to the legs, which are better able to carry weight with less fatigue and injury to the user, while enabling rapid mounting and demounting of equipment.



V. Mobile Device Mount

The Air Force 711th Human Performance Wing has devised a wrist- or arm-mount cuff assembly that enables ready, hands-free access to communication devices and other tools. The cuff uses a multi-layer blend of soft and rigid components that conform to the muscle and structure of the forearm. The tensioning system achieves a customizable, non-slip fit that can be adjusted with one hand. The modular device mount can be adapted to accommodate mapping, communication, and music devices, as well as a rail system for attaching a flashlight and other tools.





VI. HATS: Hardened Alternative Trailer System

The Hardened Alternative Trailer System is a standardized, rapidly-deployable structure for protective use in areas subject to ballistic, blast, and forced entry threats.



The Hardened Alternative Trailer System (HATS) was developed through collaborative efforts between the Army Engineer Research and Development Center, Geotechnical and Structural Laboratory and Department of State, Bureau of Diplomatic Security, Physical Security Division, Research and Development Branch.

International Standardization Organization (ISO) freight containers and other pre-fabricated units are commonly used to house personnel where temporary and rapidly deployable shelters are required. HATS, and a method of manufacturing the system, were devised for the protection of personnel and high-value assets when located in areas subject to threats of ballistics, fragmentation, blast, and forced entry. The system can be economically produced and delivered to a field location where needed without requiring assembly capabilities. Field applications of the containers may include data storage, personnel housing, medical units, and command/communications centers.

Benefits

The protection of civilian personnel and assets housed in containerized units requires structural integrity to withstand intense ballistic, forced entry, and blast pressure. Existing prefabricated units often require construction or welding skills to add reinforcement when fielded, and lack integrated protection against hostile threats and forced entry. HATS units economically meet these criteria and are rapidly deployable with minimal requirements for installation.

VII. Retractable Rifle Suppressor

An adjustable and retractable suppressor that is compatible with all MIL-STD-1913 rail systems.



Tactical assault weapons are often fitted with a sound suppressor and these devices have various performance characteristics and configurations based on the expected use or mission needs. Most sound suppressors are fixed in length, which means the suppressor always adds the same length to the weapon. Fixed suppressors do not allow a firearm to be adjusted to the environment where it is being used and most of them are fully-welded units that are incapable of being disassembled. This makes them difficult to clean leading to degradation of performance over time and eventual replacement.

A typical short barreled AR-15 has a suppressor mounted on its muzzle brake/flash hider. The suppressor is attached directly to the forward end of the weapon at the furthest end of its barrel where the muzzle brake/flash hider is formed. This existing device combination suffers from a variety of disadvantages including (1) inability to rapidly swap-out or remove the suppressor for any number of reasons (2) incompatibility with different types of weapons due to a myriad of suppressor mounting designs (3) suppressors out of tune with the weapons' motion or force dynamics during interior and intermediate ballistic phases (increasing baffle or suppressor structure strikes) (4) weight disadvantages (5) difficulty in using in restricted space environments, and (4) center of mass moved farther way from an operator which increases difficulty in use. Many of these negatives are compounded when associated with other weapons with longer barrels.

As a solution to these problems, Navy small arms engineers have developed a retractable suppressor. In close quarters, such as a vehicle or ship, the suppressor is easily retracted to conserve space and aids in concealment during stealthy operations. Further, the new suppressor has no dependence on the muzzle brake/flash hider. Many of the sound suppressors currently on the market use the muzzle brake/flash hider as a mounting surface. As a result, a specific muzzle brake/flash hider must be used with a specific suppressor. The improved suppressor allows the use of any desired muzzle brake/flash hider and accommodates variable muzzle lengths allowing the user to alter the center of mass of the weapon.

Unlike other sound suppressors, this device can be used on different caliber weapons, provided, in some cases, a bore restrictor is changed. Importantly, this suppressor can easily be disassembled, cleaned, and repaired. Repair operations can include simple replacement of suppressor chamber springs and/or floating baffles which provide a shooter with design and sustainment alternatives.

Benefits

- Reduces weight from suppressor/mounting systems
- Reduces difficulty in rapidly manipulating/deactivating the suppressor due to heat
- Reduces baffle strikes
- Provides an improved center of mass for an operator



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VIII. Flexible Body Armor

Fabric-like material fits loose and is 2 pounds lighter than equivalent existing armor.



Body armor is useless unless it is worn and given the weight, restrictiveness, and heat generation of existing body armor, too often it is not utilized. Conventional tactical body armor within the US armed forces consists of small arms protective insert (SAPI) and Enhanced SAPI (ESAPI) ceramic trauma plates. The plates vary in performance where the SAPI plates are capable of defeating M80 ball rounds and the ESAPI is capable of defeating .30 caliber armor piercing rounds. The plates are inserted within an interceptor vest which is capable of stopping 9mm handgun bullets. But these conventional plates are comparatively large and bulky, and additionally limit flexibility of the wearer.

Navy researchers have developed a lightweight and flexible body armor as an improved alternative. The armor comes in two variants: a fabric for the torso that resembles dimpled foam rubber, and an insert of interlocking pieces that lock up into a solid piece upon impact. Using both provides torso protection while the insert could be used in a warfighter's back vest panel to shield the spine from damage. The protection from bullets and fragmentation in the new armor comes from the use of tiny interlocking hexagonal tiles made of boron carbide and silicon carbide. The design of the tiles provides three advantages including: angled interfaces that reduce interstitial vulnerability common to conventional tiles, force distribution enhances multi-impact capability by reduced damage propagation, and adhesion to one surface of the tiles to a flexible fabric facilitates flexibility with an integrated and contiguous area of body protection from blunt force trauma. The ceramic tiles are joined together in an array and adhered to a liner fabric such as Kevlar. After adhesion to the liner, the tiles can be encapsulated within polyurea foam.

Benefits

- The armor is suitable for wear in all climatic conditions.
- Can replace the conventional SAPI/ESAPI plates with the ceramic tiles, forming equivalent surface area coverage but with fewer gaps for improved bodily protection.



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IX. Blast Debris Protective Harness

A lower torso and extremity blast protective garment that provides increased coverage, improved mobility, and enhanced comfort.



Many types of torso protection for service members' vital organs (e.g., heart, lungs) exist, however the soft tissue around the lower torso and upper leg regions are often left vulnerable to blast-related injuries that can have negative, long-term, quality of life impacts on urinary and sexual function. To mitigate this vulnerability, the Natick Soldier Research, Development and Engineering Center (NSRDEC) has developed the blast debris protective harness to replace the current flat groin panel which has a number of drawbacks.

The blast debris protective harness provides significantly increased lower torso protection over the current groin panel due to the ballistic inserts, comprised of overlapping layers of seam allowance uniquely sewn in opposite directions, creating a convoluted path for any small blast fragments to pass through. In addition to increased coverage, the blast debris protective harness features adjustable buckles allowing for the harness to fit snugly against the inner thighs and groin, offering increased mobility, less snagging on the surrounding environment, and for the wearer to easily doff and don the harness. During field evaluations, the blast debris protective harness achieved a higher level of user acceptability over the current groin panel, a three-dimensional diaper-style blast protective system that lacks femoral, pelvic, and thigh coverage, and a short-style blast protective system that impedes mobility, increases thermal burden, and hinders medical access.

The blast debris protective harness may be an attractive lower torso and extremity protection alternative for allied military organizations, law enforcement, and other personnel working in potentially dangerous areas.

Benefits

- The design of the harness is versatile and can accommodate the needs of the end user, be it mobility or increased protection, as the protective insert can accept a range of material compositions and protection levels.
- The seam design used on the blast and ballistic material insert provides increased protection and greater comfort
- The harness enables a closer fit to the body, yet still permits the free flow of air



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X. Armor Curtain

A lightweight and universal answer to additional protection for field operation.



One can never have enough armor. Troops occupying tanks, armored vehicles, fixed and temporary structures, and the like are always vulnerable to armor piercing threats. However, adding layers of steel and similar materials to vehicles and structures compromises their utility in various ways such as decreased mobility, decreased range, or increased weight.

Army researchers have developed an improved system and method for armor – the Mechanically-Adaptive Armor Link/Linkage (MAAL). The armor is made from linkages similar to those found on bicycle chain. Arranged in long strands and interconnected, they form curtains of armor that can be hung on or around vehicles such as tanks, armored personnel carriers, armored fighting vehicles; armored static structures such as buildings, above-ground portions of bunkers or shelters, containers for the storage of water, fuel, chemicals, munitions, and more. Unique to this system is that the armor can be arranged at oblique angles to the potential direction of a threat and thereby serve to deflect an impacting force. The curtain-like system also absorbs significant energy by deforming into an air gap between the curtain and the primary armor or asset structure such as a building wall. The armor system may be implemented as stand-alone armor, or alternatively may be implemented in connection with conventional passive armor or reactive armor.

Benefits

- Easily manufactured and can be integrated with different armor material including ceramic, metallic, and composites
- Offers improved heat signature management



XI. Selective Camera Jamming

Security and privacy protection from cameras and related optical devices.



The military has many reasons to jam or disable third-party electro optic (EO) devices. Such devices include still image cameras, video cameras, mobile tracking devices, binoculars, scopes, retro-reflective identification markers which can be attached to clothing or other articles, optical detection systems, and optical imaging systems.

These devices may utilize the infrared, visible, and the ultraviolet band. But the private sector has similar demands albeit different reasons for identifying, disrupting or disabling these devices. Examples include illegal recording in theaters and stadiums, unauthorized video or camera images of individuals, and illegal surveillance and tracking systems.

Navy researchers have developed an EO identification, jamming and disabling system comprised of an optical source emitting a signal towards an EO device, a detector to capture the optical energy reflected from the EO device, and a controller analyzing the detected optical energy to determine whether the EO device is authorized or not.

The system has a database backend that can be loaded with optical signatures from EO devices such that incoming signals can be compared. The database can contain signatures from “approved” optical devices. The system can send an EO jamming signal to specific devices or a broad signal to jam all devices, with approved devices optionally being sent an electronic authorization key.

Benefits

- System can be mounted on a turret with pan-tilt-zoom capability
- Voltage can be modulated for ideal beam power
- System can be deployed on land, sea, in the air, within buildings and outdoor spaces



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XII. Multiple Bundle Sling Load System

Payload delivery system that maximizes the equipment volume of the payload that can be used for transport up to the maximum aircraft weight capacity, and offers the ability to selectively target the release of a particular payload.



Today's service members rely heavily on helicopter resupply. The Natick Soldier Research, Development and Engineering Center (NSRDEC) has developed the multiple bundle sling load system (MBSLS) to address payload delivery in military operations. The critical nature of rotor wing military resupply demands maximum room in the aircraft for soldiers, their gear, and support equipment, maximized lift capability for a reduction in the number of required aircraft to go on missions, and elimination of the need for the crew to exit the aircraft during missions to deliver cargo.

Most helicopters have a sling (cable with a hook at one end) underneath the aircraft that can be used to externally transport bulky cargo from one location to another. The NCAMBSLS provides an automatic release mechanism allowing sling transported cargo bundles to be released remotely without the need for recovery personnel to exit the aircraft, preventing delays. The bundles can be dropped in any order required, as opposed to having to drop all payloads in order to release the payload first loaded. Individual bundles may be rigged for airdrop and then released at altitude to be delivered to the ground via parachute, without hindering the ability to deliver additional payloads via standard sling load delivery.

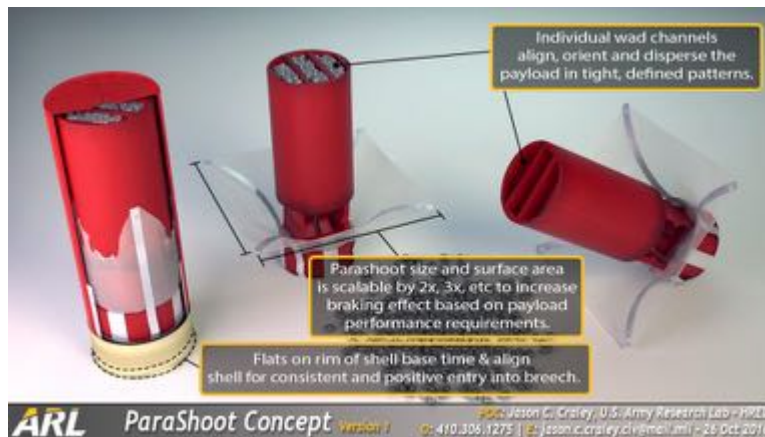
The NCAMBSLS may have broad ranging applications beyond allied military organizations, such as humanitarian relief efforts, backcountry resupply, and equipment delivery for the construction, energy transmission, and logging industries. Integration into commercially available payload delivery can maximize space over traditional payload delivery systems.

Benefits

- Reduces fuel costs and increases personnel safety without a need for the aircraft to land or hover
- Does not require a special load plan allowing payloads to be loaded, and then released remotely, in any order.
- System works independent of model helicopter used and could be deployed via a crane hook

XIII. Shotgun Shell with Configurable Shot Patterns

Configured shot pattern can be tailored for a number of mission, tactical, sporting, and hunting applications.



Newcomer Arms' new shot-shell systems represent a significant improvement over present day shotgun shells, where shot dispersion is controlled mainly by the degree of mechanical bore-choking at the barrel's end (or muzzle). Although quite effective and in use since the 1800s, mechanical chokes can only provide the familiar circular projectile pattern. In contrast, the NCA's ARL system is adaptable and can provide for a number of different dispersal configurations. In one embodiment of the invention, a projectile director is placed within the shell, where it guides the projectiles very quickly after exiting the muzzle into wide, concentrated, vertical, horizontal, or a multitude of various patterns depending upon the intended effect on the target. In another variation, the petals of the wad are angled to rapidly spin and deploy one or more projectiles, which could include pellets, slugs, chemicals, tear gas, and mal-odorants. In other variations, the opening of the wad petal system can be delayed for dispersion of the projectiles at a greater distance from the muzzle or to pass through a window and then deploy.

The projectiles may be any type or shape of ammunition desired, such as steel shot, lead shot, sintered shot, plastic shot, rubber shot, CS pellets, flechettes, and more, depending upon the desired application.

Benefits

- First-available system for shotguns to customize lethal and non-lethal effects by modifying the shotshell to control timing and dispersion patterns of expelled projectiles
- Compatible with current shotgun shell manufacturing techniques
- Flexible ammunition payload, including various shot and chemicals, depending upon desired effect on target or mission requirements
- Target markets include military, homeland defense, police, civilian home defense, sporting clays, shooting competitions, and hunting
-

XIV. Remote Human Detection

Using radio waves, the RHD detects resonant frequencies inherent in the human body and incorporates unique processes to minimize false alarms.



Passive infrared sensor (right) and light dependent resistor (left).

Motion detectors provide useful security information. Common types of detectors include IR sensors, ultrasonic beams, lasers, and cameras. Although these devices can detect motion, they are not selective and cannot determine what is causing the movement. Additionally, false readings can be caused by environmental conditions.

This innovation is a method and system that can detect motion, and it is able to decide what caused the movement. Through a novel use of radio waves the system can determine if the movement was caused by a human, an animal, the type of animal, or a machine. If a human is involved, the system can determine if the intruder is armed. The system works by scanning an area of interest while no intrusion is present. This provides a baseline signature. Similar signatures of machines, indigenous animals, and mankind are stored in the device's database. When intrusion occurs, the device compares the signature against its database of baseline signatures and determines if a threat is present. This system can be placed in security devices used in the military, at home or business, and at border crossings.

Benefits

- Ability to determine what caused the intrusion and if the intruder is a threat



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XV. Anti-Swimmer Grenade

A depth activated explosive with intended uses in defense against enemy divers. Added safety features ensure the safe usage from floatation devises and boats.

An underwater grenade and a method for using an underwater grenade. A depth activated, hand emplaced ordnance utilizing safe and arm technology to address underwater threats (such as enemy swimmers) while providing a safe interface with personnel. The grenade is armed after a sequence of events have occurred including reaching a desired depth and a desired passage of time. Failure of any of the events to occur will cause the grenade to be rendered safe.

More details to be released upon testing and improvement(s).



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XVI. Fast Rope

In collaboration with NovaBraid, Newcomer is introducing a new line of fast rope technology that aligns itself with the Auto Belay System.



In both weighted and non-weighted versions, an internal Spectra strength component offers lower stretch and improved cut resistance. The twelve strand Multiplex polyester cover is 1.75 in diameter, with improved grip and abrasion resistance. Severing of a cover strand will not compromise rope strength. The NovaBraid Fast Rope features a stainless-steel thimble termination on top and can be FRIES configured with optional Spectra extraction and safety loops. The thimble and polymer covered Spectra eye ARE designed to accept two standard carabineers for aircraft connection.

In addition to operational testing performed by the U.S. Navy, Newcomer, and SOCOM, the fast rope design has been subjected to extensive destructive testing by the U.S. Army Natick Soldier Research Center. Testing results confirmed full operation in temperatures from – 40C to + 49C, sandblast, abrasion resistance, salt fog, aviation fuel, deicer, dielectrics, UV exposure, dynamic load, and core cover separation. Break tests were conducted on all exposed samples with no loss in tensile strength.

| Tensile Strength | | |
|------------------|-----------|-----------|
| Max | 37,500 lb | 17,008 kg |
| Avg | 31,400 lb | 14,243 kg |
| Min | 25,500 lb | 11,566 kg |
| Dia | 1.75 in | 45 mm |
| Wgt/ft | 1.2 lbs | .54 kg |