

UTAH ARMY NATIONAL GUARD  
TRAINING SITE COMMAND

# PAINTBALL

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STANDARD OPERATING PROCEDURE (SOP)

PAINTBALL  
STANDARD OPERATING PROCEDURE

Summary: This Standard Operating Procedure (SOP) is the first edition which covers the Camp W. G. Williams operational policies, procedures, and requirements for proper use and scheduling of paintball equipment and paintball training areas.

Purpose: To standardize Camp W. G. Williams paintball operational policies, procedures, and requirements for Training Site Staff and the user

Applicability: This SOP applies to all users, units, and/or organizations assigned to or training at this installation.

Suggested Improvements: The proponent of this SOP is UT-AGCW-RC, Camp W. G. Williams, Utah. Users of this SOP are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) to Camp W. G. Williams, ATTN: UT-AGCW-RC, 17800 South Camp Williams Road, Riverton, Utah 84065-4999.

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## **CHAPTER 1 GENERAL INFORMATION**

### **1. REFERENCES**

Department of the Army Regulation 385-63, Range Safety, Department of the Army.

United States Army Special Operations Command (USASOC) Regulation 385-1 Safety: Accident Prevention and Reporting, U.S. Army Special Operations Command, Fort Bragg, North Carolina

Army Garrison Camp Williams (AGCW) Regulation 350-5, Training Site Command, 17800 South Camp Williams Road, Riverton, Utah 84065, 18 December 2005

Department of the Army Pamphlet 350-38, Standards in Weapons Training, Headquarters Department of the Army, Washington, DC

Department of the Army Pamphlet (DA PAM) 385-63 Range Safety, Department of the Army.

Field Manual (FM) 3-06-11 Combined Arms Operations in Urban Terrain, Headquarters, Department of the Army, Washington, DC.

Training Circular (TC) 90-1 Training for Urban Operations, Headquarters Department of the Army Washington, DC.

United States Army Combat Readiness Center web site, located at <https://crc.army.mil/home>.

H&K Shoot House Instructor Development Lesson Plan, August 2002, Heckler & Koch, Inc. 21480 Pacific Boulevard, Sterling, Virginia 20166.

### **2. SOP REVIEW.**

a. All personnel utilizing any Paintball Training Areas or any paintball equipment must review this SOP.

b. All FTM personnel working at Range Control and Camp Williams Logistics Center will be familiar with this SOP.

c. This SOP will be reviewed and updated annually by the Range Control OIC.

**3. HOURS/SEASONS OF OPERATION:** Paintball training events are authorized seven days a week, one hour prior to BMNT to one hour after EENT. Range Control OIC reserves the right to restrict these hours as necessary.

### **4. SCHEDULING PROCEDURES:**

a. In order to use any Camp Williams paintball equipment or paintball training areas, all users must currently be qualified on his or her assigned weapon.

b. Camp Williams Range Control owns M4 .68 caliber paintball markers that must first be scheduled through RFMSS before they may be checked out at the Range Control Fire Desk. Requesters must schedule use of the paintball training area and paintball equipment NO LATER THAN 30-days in advance, through Range Control and follow all established guidelines as with any other training aid

c. For units/organizations with access to RFMSS,

1) Logon to the Camp Williams Remote Scheduler.  
2) Submit a non-standard request for "PAINTBALL MARKERS (1-5, 6-10, 11-15 and/or 16-20)". Each paintball training aid package above comes with 5 paintball markers, 5 carrying harnesses, 5 hoppers, 5 air tanks, 5 masks and 20 paintball bottles.

3) Submit a separate request for the paintball training area that includes the total number of personnel occupying the range.

d. For units/organizations without access to RFMSS

1) Visit our website: [www.ut.ngb.army.mil/campwilliams](http://www.ut.ngb.army.mil/campwilliams) and following the scheduling procedures for training aids.

2) Submit a UTNG 3014 for the paintball equipment listing the exact quantity needed and exactly what time and date you'll pick them up.

3) Submit a separate request for each paintball training area.

d. Unit/organizational leaders will sign a liability waiver form and/or statement of understanding when they come to pick up the weapons. See Appendix K for an example of this form.

e. Upon completion and clearance, units will turn in all equipment to Range Control no later than the time listed in their request.

f. Range Control will ensure all paintball markers are stored in a weapons vault when not in use.

g. All paintball equipment and PPE not issued by Range Control must meet American Society of Testing Materials (ASTM) standards for safety. Range Control will only approve requests of units/organizations who certify in writing that its equipment meets ASTM standards.

## 5. DUTIES AND RESPONSIBILITIES:

a. The use of a UTARNG paintball training area and/or handling of paintball equipment on Camp Williams requires using units to take special safety precautions. Personnel involved with training that utilizes paintball equipment will comply with this SOP, AR 385-63 DA PAM 385-63 PAM 385-63, USASOC Reg 385, Tippman 98 Custom Owner's Manual and all other applicable Training Site Command regulations and publications.

b. Range Control

1) Stores and maintains all Camp Williams paintball masks, CO<sub>2</sub> tanks, carrying harnesses, chronographs and ammo bottles.

2) Issues paintball equipment minus the markers to all scheduled units/organizations and maintains sub-hand receipts for all this equipment.

3) Oversees and enforces compliance of this SOP's as well as other applicable regulations and guidelines.

4) Conducts paintball safety training for RSOs and Range OICs.

5) Publishes paintball safety bulletins and alerts as needed.

6) Reviews and updates this SOP annually and as needed.

7) Makes sure paintball markers are available for use by the using unit at the time and date specified in their request.

8) Schedules and tracks usage of all Camp Williams paintball markers and training areas.

9) Designates boundaries and limits of all authorized Paintball training areas and ranges and publishes changes/restrictions of training area usage.

c. Camp Williams Logistic Center

1) Verifies proper storage of all Camp Williams Paintball Markers.

2) Maintains all Camp Williams Paintball Markers.

3) Properly stores all paintball Camp Williams markers.

4) Issues all paintball markers to using units on the day of their training event.

d. Range OIC

1) Must be E-6 or above.

2) Oversees compliance and performs all other duties in accordance with this SOP, Camp Williams Reg 350-5 and DA PAM 385-63 pages 4 thru 6.

3) Receives paintball safety training from Range Control.

4) Conducts a paintball specific safety briefing prior to any paintball training event.

5) Monitors/supervises activities of RSO and paintball safeties.

6) Calls for emergency medical support when needed.

7) Acts as liaison with Range Control during emergency operations.

8) Ensures that the training area is used in accordance with this SOP.

9) Ensures proper PMCS of all paintball markers and equipment in use on the paintball training area.

e. Range Safety Officer (RSO)

1) Must be E-5 or above.

2) Supervises the overall safe execution of any paintball training event and performs all other duties in accordance with this SOP, Army Garrison Camp Williams (AGCW) Reg 350-5 and DA PAM 385-63 pages 4 – 6.

3) Receives paintball safety training from Range Control.

4) Officially starts and stops all paintball engagements.

5) Acts as “referee” during all paintball engagements.

6) Monitors and ensures that no bystanders inadvertently enter the paintball engagement.

7) Supervises activities of paintball safeties and ensures all safeties are properly trained.

8) Ensures that **ALL** occupants (participants, observers, supervisors, etc.) on the paintball engagement are properly wearing their PPE.

9) Ensures the safe conduct of all participants as per the manufacturer’s recommendations for the paintball equipment in use.

f. Paintball Safety

1) Must be E-4 or above.

2) Assists the RSO and Range OIC in ensuring the safe execution of any paintball training event as outlined in this SOP.

3) Monitors and ensures that no bystanders inadvertently enter the paintball engagement area.

4) Monitors activities of all individual participants of the paintball engagement ensuring their safe conduct in accordance with this SOP and guidance from the RSO.

5) Ensures **ALL** occupants on the paintball field are wearing PPE and notifies RSO when someone is out of compliance.

6) Stops any paintball engagement when they notice any unsafe act

## 7. ABBREVIATIONS AND DEFINITIONS.

a. **.68 cal PAINTBALL:** The caliber of paintball authorized for use in all AGCW paintball markers.

b. **AGCW:** Army Garrison Camp Williams.

c. **BARREL PLUG:** A nylon bag or plastic cap designed by paintball manufacturers to completely and safely plug the barrel of a paintball marker and prevent the inadvertent exit of paintball ammunition. Only use barrel plugs designed by the manufacturer of the marker you're using.

d. **BMNT:** Begin morning nautical twilight

e. **BUFFER ZONE:** 100 meter area that parallels the paintball training area boundary and runs between that boundary and the paintball engagement area. No paintball engagements are authorized in the paintball safety buffer zone. This buffer zone is designed as a control measure to help mitigate the risk of bystanders inadvertently wandering onto the paintball engagement area as well as reduce the risk of stray paintballs hitting targets not intended for engagement. The Buffer Zone will be determined by the OIC and RSO. It will be marked with engineer tape or outlined on a map.

f. **EMNT:** End evening nautical twilight

g. **PAINTBALL ENGAGEMENT:** When participants with loaded markers actively engage targets or OPFOR (opposing force). This is the only time when barrel plugs are authorized to be removed from markers.

h. **ENGAGEMENT AREA:** The only portion of the paintball training area in which active paintball engagements are authorized. It is located inside the paintball safety buffer zone. It should never extend to within 100 meters of the training area boundary or 200 meters of the Camp Williams boundary.

i. **PAINTBALL EVENT:** A training event involving markers and equipment.

j. **PAINTBALL MARKER:** The technical term for a paintball gun.

k. **PAINTBALL TRAINING AREA:** The geographic area on Camp Williams including the safety buffer zone in which paintball events are authorized. There are specified paintball training areas on Camp Williams that are authorized for use. See Chapter 4 for more detailed information on these locations.

l. **PMCS:** Preventive maintenance checks and services

m. **PMI:** Preventive maintenance inspection

n. **POV:** Personally owned vehicle

o. **PPE:** Personal Protective Equipment. See Appendix C for a list of required equipment.

p. **RFMSS:** Range Facility Management Support System. This is an automated system used to track the usage of all ranges, facilities and training aids on Camp Williams.

q. **RSO:** Range Safety Officer. For more information on their paintball specific duties and responsibilities see the previous paragraph.

## **CHAPTER 2 HANDLING, SAFETY AND CONDUCT**

### **1. GENERAL.**

- a. The precautions given in this section apply to all paintball activities on Camp Williams.
- b. Precautions for specific paintball equipment will be listed in each marker's user manual.
- c. Report any defects or unusual conditions not covered in this SOP to the Range Control NCOIC (801-253-5733).
- d. Leaders engaged in a paintball training event will have this SOP available at all times.
- e. Range Control will notify all personnel training with paintball equipment on Camp Williams of any safety messages regarding changes in equipment advisories and/or restrictions.

### **2. HANDLING PAINTBALL EQUIPMENT.**

- a. Although AGCW markers look similar to the military M4, paintball markers are not built to military standards. Handle each marker with greater care than you would a normal M16/M4.
- b. Protect all paintballs and paintball equipment against undue shock, tampering, and exposure to moisture.
- c. Handle any paintball marker as if it were a loaded lethal weapon at all times. Never look down the barrel of a marker even if it is not loaded.
- d. Avoid using the paintball marker to break your fall.
- e. Each individual and organization/unit is responsible to ensure the proper maintenance of the equipment they sign out from Range Control. (See Appendix B for detailed maintenance information.)
- f. Paint markers must have a barrel blocking device (plug) inserted in the barrel at all times, except while actively engaging targets on a paintball engagement area. This applies to all paintball markers whether a part of the Camp Williams inventory or not.
- g. If an air tank has a CO<sub>2</sub> leakage, avoid coming into contact with the gas. CO<sub>2</sub> has a freezing temperature (-76 C°) and this may cause frostbite or other damage to your skin. If a marker is leaking, put it aside and call a paintball safety or the RSO. Only Range Control personnel are allowed to fill air tanks.
- h. Always be prepared for a paint marker to malfunction. Always have an Allen wrench on hand to ensure proper airspeed adjustment.
- i. Do not carry any marker from the CO<sub>2</sub> supply hose or the tank, otherwise the gas might leak and cause the marker to malfunction.
- j. The most important thing about paintball equipment maintenance is to clean it before/after every paintball event. It is important to keep all equipment working at its peak performance from your goggles to your paint marker. Always, after a day of paintball break down each paint marker, clean it completely, and lubricate it before turning it in. Units checking out paintball equipment from Range Control are responsible to ensure that it is cleaned, lubricated and maintained in accordance with the user manual that came with the marker. For additional information refer to Appendix B: Equipment Maintenance.
- k. Never leave any paintball equipment unattended between paintball events and always lock it up when not in use.

- l. Never attach the air hose/canister or remove your barrel plug until told to do so by the RSO. Keep a barrel plug in the barrel when not in use.
- m. Never let the marker be exposed to direct sunlight.
- n. Each unit/organization using paintball markers on AGCW will ensure that all markers are properly adjusted for airspeed as per Appendix P.
- o. The marker must be pointed in a safe direction, away from people not wearing PPE. Always treat the marker as if it were loaded (just like a gun). Keep your finger off the trigger unless you intend to fire.
- p. Unload and depressurize markers when not in use. Do not take anyone's word; ensure the marker is depressurized yourself before you pick it up. Always transport the marker in the trunk of the vehicle or under a protective cover.
- q. Do not throw, toss or drop your marker or touch another person with it.
- r. Never disassemble a rented marker.
- s. Range Control markers are not to be modified or customized in anyway. Users who violate this rule could be held liable for the entire cost of the marker.

### 3. PAINTBALL AMMUNITION

- a. Safety Precautions.
  - 1) When temperatures approach freezing, paintball ammunition freezes or gels up causing the ammunition to be unsafe for use. Although freezing temperatures may vary among the different manufacturers of paintball ammunition, no force-on-force paintball operations are authorized on Camp Williams when the ambient temperature is below 32°F. Each unit/organization will refer to and adhere to the manufacturer's specific precautions printed on the label of their paintball ammunition. Non-toxic, non-caustic, water-soluble and biodegradable paintball ammunition is the only paintball ammunition authorized for use on Camp Williams. See Appendix P tables A and B for more details on safe use of paintball ammunition in force-on-force operations in cold weather.
  - 2) Storage. For optimum performance, expend all paintball ammunition within 2-3 months of purchase. As per manufacturer's instructions, remember to store paintball ammunition upside down from the orientation in which it was shipped, and turn it over again before loading your markers. Using unit will ensure that all paintball ammunition is stored at temperatures between 50° and 80°F.
- b. Acquiring Ammunition: Each unit must purchase their paintball ammunition prior to conducting their training. Once purchased, units will bring the **SEALED** container of ammunition to Range Control for examination and storage no less than 12 hours before the scheduled training event is to commence. Units may purchase paintball ammunition from any local vendor. The shell must have a thin to medium thickness. Winter paintball ammunition is authorized for use on Camp Williams on a case-by-case basis.
- c. Refer to each manufacture's Material Safety Data Sheet (MSDS) for additional paintball ammunition safety precautions. Each unit/organization must ensure that their paintball ammo meets the standards listed in paragraph "a" of this section.
- d. Range Control reserves the right to deny usage of any paintball ammunition that has an expiration date past the day of the scheduled the training event. Range Control will deny usage of any paintball ammunition that does not adhere to this SOP.

#### **4. PAINTBALL EVENT GUIDELINES.**

a. Each unit will designate one RSO and one Range OIC for their paintball training event. The RSO and Range OIC will report to Range Control at 0700 on the day of their training event to receive a final safety brief. Additional paintball safeties should be assigned to assist the RSO in his duties. The RSO should have a whistle for signaling the start and end of the paintball event. Decisions by the RSO are final.

b. The Range OIC will ensure all vehicle movements are in compliance with and personnel/equipment accountability throughout the entire training event. After each paintball engagement, the RSO will conduct AARs emphasizing effectiveness of all safety control measures to all participants.

c. The Range OIC will maintain accountability of all personnel present on the paintball training area at all times. If any person leaves the training area with a loaded paintball marker, the Range OIC will terminate the event. The participant violating this rule will surrender their marker to the Range OIC.

d. The RSO will clearly indicate limits of play of the paintball engagement area with placards and/or a verbal description. See Chapter 4 for more details on paintball engagement area layout.

e. Paintball on live-fire ranges. The RSO and Range OIC will ensure that the range is run in accordance with AR and DA PAM 385-63 just like any other live-fire range.

f. Paintball engagements on non-live fire ranges and training areas. The RSO will setup the training area in accordance with Chapter 4 and Appendix O of this SOP. The RSO will eliminate any participants caught outside of the training boundaries during paintball engagements. These participants will surrender their marker and will leave the paintball engagement area never to return without authorization from Range Control.

g. Bystanders. Most of the serious injuries during paintball engagement have been inflicted on children and bystanders who inadvertently walk onto a paintball course/field. Only personnel wearing the proper PPE as per Appendix C are authorized on the paintball engagement area. All paintball participants will be on the look out for persons who wander onto the training area at all times. If any unauthorized person should enter the training area, the RSO will cease all paintball engagements until the bystanders exit the area.

h. Unit/organizational leaders must positively signal to the RSO that all participants are ready, in order for the paintball event to commence.

i. PPE. Using units must ensure all participants wear the required PPE listed in Appendix C all the times. The most common injury in paintball is an eye injury from negligent discharges. A 3-gram paint ball shot at 300 FPS is moving at roughly 204 MPH (80-100 m/sec) and delivers about 10 foot/pounds of energy at 25 yards. Serious injuries may result. Therefore, the most important piece of PPE are the paintball goggles. Only goggles that comply with the American Society of Testing Materials (ASTM) for paintball are authorized for use on Camp Williams training areas and live-fire ranges. Shop, ski, and other type goggles do not provide the full protection necessary for paintball engagements. Also, if the distance between two rival participants is less than 2 meters or 3 yards, either both participants increase the distance, or the RSO stops the paintball event. During paintball engagements, goggles are to be worn at all times by all persons on the paintball training area. Only when the RSO declares cease fire and all barrel plugs are in place may participants safely remove their goggles. Don't ever take your goggles off even if you become sweaty or hot or if you are out of play. Only remove your goggles when directed to do so by the RSO.

k. It is strictly forbidden to bring or consume alcohol before, during, or after the paintball event.

l. Deliberate headshots are not authorized.

m. The internet has a large amount of information on paintball safety. For a list of some of these sites see Appendix M.

## **5. COMPOSITE RISK MANAGEMENT/MITIGATION**

a. Every unit will conduct a Risk Assessment for each paintball training event they conduct at Camp Williams.

b. Each Risk Assessment will include eye injuries as a hazard and list proper control measures for them.

c. Other risk considerations include but are not limited to the number of safeties per personnel being trained, the weather, the terrain as well as the use of paintball equipment in conjunction with vehicles (See Chapter 3 and 4 for more information).

d. See Appendix P for a sample Risk Assessment.

## **6. OCCUPYING A PAINTBALL TRAINING AREA.**

a. Nobody on a paintball training area will load their hopper or loading mechanism until the range has been declared hot by Range Control and all safety devices are in place: barrel plugs, safety personnel, flags, whistles, radios, range boundary placards, uniforms and/or blow horns as appropriate.

b. The unit conducting the paintball training must ask for a hot time from Range Control via radio or phone at (801) 253-5733.

c. The unit must also conduct hourly radio checks with Range Control.

## **7. WILDLIFE**

a. There are a number animal species both wild and domestic which are native to or frequently visit Camp Williams. Examples include but are not limited to: rodents of all types, mountain lions, birds of prey, snakes, cattle (several breeds), coyotes, bobcats, and deer.

b. Leave all these species alone. DO NOT shoot any these or any other species you encounter on Camp Williams.

c. Report all snake bites or wildlife related injuries to Range Control as per Appendix I: Emergency Medical Evacuation (MEDEVAC/CASEVAC) Procedures.

**8. TERRAIN CONSIDERATIONS.** Each unit will include terrain hazards and corresponding control measures in a safety brief prior to the execution of their training event.

**9. FIRE FIGHTING PROCEDURES.** All AGCW fire fighting policies and procedures apply to paintball training area.

## **CHAPTER 3 VEHICLE / CONVOY GUIDELINES**

### **1. VEHICLE / CONVOY REQUIREMENTS.**

a. UTARNG convoy operations and procedures. As per guidance from UTARNG, G4 each unit conducting a convoy must submit a convoy clearance form to the G4.

b. AGCW convoy operations and procedures. All convoy operations occurring on Camp Williams will be cleared through Range Control. POV's are not authorized on the ranges except when cleared through Range Control.

c. Vehicles and paintball equipment. A safety briefing must be conducted that covers the potential risks of using vehicles to engage in MOUT operations.

d. Vehicle requirements for paintball training areas.

1) Only military vehicles are authorized for use in paintball training.

2) Every convoy operating on AGCW should have as a minimum one range radio in addition to T&OE radio equipment.

3) Every convoy should have a current Camp Williams Special Map at 1:25,000 scale and every vehicle should have a route sketch depicting the route and checkpoints.

4) Each unit will designate one vehicle to be a Safety/Medical vehicle on the paintball training area.

e. Mounted operations with paintball equipment is strictly prohibited on Watts and Range Roads. Mounted operations on the following roads must be cleared through Range Control prior to execution: Tickville road, Beef Hollow, Wood Hollow and any maneuver trail.

### **2. VEHICLE SAFETY.**

a. Speed limits. Obey all posted speed limits on AGCW. Convoy speeds while conducting MOUT training with paintball will not exceed 25 MPH.

b. Safety belts. All personnel riding in vehicles must wear their seat belts at all times. Modified or altered seats are not authorized.

c. Kevlars. Requirement for all personnel to wear Kevlar helmets.

e. Range orientation. Vehicle operators must be familiar with the terrain at the paintball training area by conducting a thorough orientation before going "HOT" on the range.

f. Intervals. Follow guidelines in FM 21-305.

g. Command and Control.

1) Convoys of 2-4 vehicles should have as a minimum a convoy commander and rear vehicle commander both of which have a means of communication.

2) Convoys of 4 or more vehicles should be divided into chinks and have a convoy commander and chink commanders as necessary.

h. Contingency plans. Each unit/organization will prepare detailed contingency plans as necessary for their training event. The next paragraph provides some guidance on contingencies.

i. Do not exit a vehicle until before coming to a complete stop. Do not start your engine until all personnel are mounted properly and/or at a safe distance from your vehicle.

### **3. CONTINGENCIES.**

a. Accidents. Report immediately to Range Control. Remove injured personnel and follow MEDEVAC procedures in Appendix I. Follow instructions from Range Control before extracting vehicles.

b. Vehicle breakdowns. Report immediately to Range Control. Follow instructions from Range Control before extracting vehicles. Call UTES at 801-253-5527 for assistance if needed. If you can not reach UTES, call Security at 801-253-5455, or you can reach them on RC1, their call sign is “Security Base”.

c. Becoming lost. Stop, report immediately to Range Control on RC1 or 801-253-5733 for assistance and accountability. If you can not reach Range Control, call Security at 801-253-5455, or you can reach them on RC1, their call sign is “Security Base”.

d. UXO discovery. Stop, don’t touch the UXO. Mark around the UXO with engineer tape and stakes several meters away. Leave the area. Report immediately to Range Control.

e. Injuries. Report all injuries immediately to Range Control. (See Appendix I: Medical Evacuation Procedures)

f. Inclement weather. Bring appropriate clothing depending on the season. Stay in vehicles during lightning storms. Be prepared to terminate training events if weather becomes severe enough.

#### **4. APPROVED CONVOY ROUTES.**

a. Maneuver trails through Pinyon Hill and Medic Hill Training Areas starting and ending at least 200 meters from Tickville or Watts Roads. Convoys are not authorized within 100 meters of any of the PLDC buildings within the Pinyon Hill Training Area. No off road traffic is authorized.

b. Maneuver trails through Oak Springs training area. Convoys may engage targets and/or conduct limited force-on-force engagements starting and ending at least 200 meters from Watts Road and the Camp Williams boundary. Convoys are not authorized within 200 meters of the PLDC buildings within the Oak Springs Training Area. No off road traffic is authorized.

d. See the Camp Williams Special map for details on routes through these training areas.

#### **5. RESTRICTIONS.**

a. Civilian. All POV’s are prohibited down range.

b. Law Enforcement. Law Enforcement agencies may use any paintball training area, but must supply their own paintball equipment and vehicles.

## **CHAPTER 4**

### **TRAINING AREA REQUIREMENTS AND RESTRICTIONS**

#### **1. ENVIRONMENTAL CONSIDERATIONS.**

- a. Use **ONLY** bio-degradable water-based paintballs. All other paintball types must be cleared through Range Control and ERM.
- c. The Paintball Training Area may change locations from year to year to reduce the environmental impact of users.
- d. Stay on the approved convoy routes for paintball engagements listed in the previous chapter.

#### **2. LAYOUT AND BOUNDARIES.**

- a. Once a unit occupies a training area to conduct paintball operations they must establish firm boundaries for the paintball engagement area and subsequent buffer zone.
- b. The entire paintball training area must fit inside the boundaries of any given training areas on Camp Williams.
- c. The paintball engagement area must fit inside the paintball training area. The paintball engagement area boundary must be at least 100 meters from the training area boundary in all directions and not be closer than 200 meters from the installation boundary and all major access roads such as Watts and Tickville Roads.
- d. The buffer zone is the space between the paintball engagement area and the training area boundary. This buffer zone must be at least 100 meters wide at all locations.
- e. The boundary of the paintball engagement area must be clearly marked with distinguishable markers: pickets, engineer tape and/or placards or easily recognizable by all participants. It is the responsibility of the using unit to establish, set up and tear down the paintball engagement area boundary markers.
- f. At the MAC MOUT facility: this facility including the Urban Defense building, the classroom and Hogan's alley must be requested in RFMSS separately for the times needed for a unit's training event. The control point for this facility when used for Paintball engagement is the MOUT gate and no one will be allowed into the facility unless they have the proper PPE to be there during a Paintball Engagement.
- g. Map of sample layout. See Appendix O.

#### **3. SAFETY REQUIREMENTS.** Each unit utilizing a paintball training area will ensure the following is accomplished:

- a. Prominently display a paintball inspection card on their medical evacuation vehicle.
- b. Post a Red Range flag at the entrance to the Paintball Training Area.
- c. Establish an inspection/clearing point near the entrance of the Paintball Training Area.
- d. Establish a MEDEVAC rally point and a safety vehicle near the entrance of the Paintball Training Area.
- e. Monitor the range for bystanders at all times. Cease all Paintball engagements until all bystanders have exited the range.
- f. Monitor all personnel to ensure they are wearing their PPE and are following all safety guidelines found in this SOP. Cease all engagements until safety guidelines can be followed properly.

**4. APPROVED PAINTBALL TRAINING AREAS.** The MOUT facility, Area 51, ISBC, POW Camp, Medic Hill, Pinyon Hill, Saratoga, and Land Navigation Training Areas are currently the only recommended paintball training areas on Camp Williams. Combining two or more training areas for paintball operations is authorized, however, movement between the two training areas may be restricted and any such design must be approved through Range Control.

## **CHAPTER 5**

### **PAINTBALL EQUIPMENT TURN-IN AND RANGE CLEARANCE**

#### **1. TURN-IN AND INVENTORY REQUIREMENTS.**

- a. Each unit/organization using the Paintball Training Area will inspect and inventory all equipment and facilities before leaving the range as per this SOP.
- b. Turn in all equipment to Range Control the day your event ends using a Range Clearance and component checklist (Appendix R).
- c. Clear all facilities and training areas the day your event ends.
- d. Any missing part from the Paintball Equipment will be charged to the unit via a financial liability investigation.

**2. CLEARANCE OF PAINTBALL EQUIPMENT.** Ensure all paintball equipment is accounted for. Note any damages and report them to Range Control. Turn in all equipment to Range Control the day your event ends. Local Law Enforcement is responsible to reimburse Range Control for any damages/losses to the equipment they checked out.

- a. Clean barrel of all debris and paint residue.
- b. Apply oil to bolt and air ports as required.
- c. Turn off air tank and empty air line before disconnecting the tank from the marker.
- d. Wipe paint residue off all surfaces: marker, mask, uniform, tank, hopper, and ammo carrier.
- g. Police up all unexpended rounds.
- h. Clean all other debris, mud, dirt, leaves, paintball residue and/or rocks from all surfaces of the equipment.

**3. CLEARANCE OF TRAINING AREA/FACILITIES.** It is the responsibility of the unit/organization using the paintball training area to clear and clean the range and facilities. Ensure facilities are clean, useable and returned to its original condition as per the instructions below.

- a. All trash cans must be emptied into dumpsters. All trash receptacles will be cleaned out.
- b. Latrines will be cleaned.
- c. All furniture will be returned to its location and wood must be set neatly in a pile, out of the way.
- d. All buildings will be swept out and free of mud, dirt, trash, brass, paint residue or anything else except furniture.
- e. **NO URINATING, DEFECATING, OR SPITTING WILL BE ALLOWED IN ANY BUILDING. IF THIS OCCURS, THE ENTIRE AREA WILL BE STERILIZED. ALL OTHER BODY FLUIDS, i.e., BLOOD, MUCUS, VOMIT, WILL BE PROPERLY CLEANED AND STERILIZED BY THE UNIT/ORGANIZATION.**
- f. All drains and windows will be free of all items, i.e., dirt, trash, brass, etc.
- g. Storm drains (sewer) system will be policed and free of all items and paint residue.
- h. Smoke and paint stains will be removed from all paved/cement areas, inside or outside.
- i. No commo wire will be left at the site. All trip wires will be removed.
- j. All graffiti will be removed.
- k. Any damage will be reported to the Range Control cadre.

1. When unit is ready for inspection, they will provide a minimum of 4 personnel with brooms and dust pans for final, minor clean up. These personnel will accompany the Range Control Cadre during final inspection.

## APPENDIX A REQUIRED DOCUMENTATION

1. Each unit/organization using the Paintball Training Area will have on hand a copy of the AGCW Paintball SOP, the Paintball Safety Bulletin, the Paintball inspection card, signed Consent Forms as necessary, and Hand receipts for equipment and markers.
2. RSO certification. To get certified visit our Website:  
[http://www.ut.ngb.army.mil/campwilliams/RSO\\_Certification.htm](http://www.ut.ngb.army.mil/campwilliams/RSO_Certification.htm)
3. Each unit/organization using the Paintball Training Area will ensure that Range Boundary Cards/Placards and flags are properly posted at the range.
4. Clearance Form. Keep a copy on the Range Clearance Form on hand to assist in clearing the range
5. Paintball Marker User's Manual. Ensure a user's manual for each type of marker is on hand at the Range. These manuals are found in the package your marker came in, or for AGCW markers they available at Range Control.

## APPENDIX B EQUIPMENT MAINTENANCE

1. Inspect and clean all paintball equipment before and after any Paintball engagement, when picking up the equipment and before turning it in at Range Control.

### 2. Goggles.

a. Cleaning. Clean off all debris, dust, rocks, and paint residue. Don't just wipe off the glass; wash with warm water and light detergent.

b. Inspection. Inspect glass for cracks, stains, and scratches that may obstruct view. Ensure glass fits securely into the face mask. Inspect the strap for rips and frays. Inspect the entire mask for cracks and large holes.

c. Report any problems to Range Control immediately. Don't use any mask that is cracked.

### 3. Tanks.

a. Cleaning. Wipe off debris, dust, rocks and paint residue. Remove all tanks from carrying harnesses and disconnect the remote cable or air cable from marker only after the tank valve is closed and all air from the line has been expelled by firing the marker a min of 5 times into the dirt.

b. Inspection. Inspect all tanks for air leaks and cracks.

c. Report all problems to Range Control. Never use a leaking air tank.

### 4. Carrying harness.

a. Cleaning. Clean off all debris, dust, rocks, and paint residue. Wash with warm water and light detergent as necessary.

b. Inspection. Inspect each clip for cracks and breaks. Check each strap for rips and frays. Check the belt for frays and rips. Ensure the belt clip is free of cracks and adjusts properly. Don't use a harness with broken clips.

c. Report any problems to Range Control.

### 5. Tippman 98 marker and attachments.

a. Cleaning. Wipe off all debris, dust, rocks and paint residue from marker, butt stock and barrel using a damp rag.

b. Inspection. See owner's manual

c. Oil and lube. See owner's manual

d. Report any problems to Range Control. Don't use a marker until the barrel is clean of paint residue and bolt is properly lubed.

6. Vehicles. Ensure a proper PMCS has been done on all vehicles before heading down range.

## APPENDIX C UNIFORM AND SPECIAL EQUIPMENT REQUIREMENTS

1. Using units are responsible for ensuring that soldiers have the proper uniform and equipment.

2. The following is an equipment breakdown is **REQUIRED** to be worn to train at the PAINTBALL Facility. Additional uniform and equipment requirements are based on unit training guidelines and the commander's assessment:

**Clothing:** Must be a military uniform with sleeves down (i.e. BDU's, ACU's or OPFOR approved or procured from Range Control.) It is also recommended that you wear other protective clothing like MOPP or types of Flak vests for your added protection.

**Load Carrying Equipment (LCE or LBE)**

**Kevlar or approved head cover.**

**Paintball Markers:** All paintball markers must be adjusted properly for the activities for that day. See Appendix N.

**Paintballs:** You may only use paintballs that are from the approved for usage paintball list found in Range Control.

**Barrel plugs**

**Goggles/Masks:** All masks must be designated paintball masks that have a 300 fps rating that are cleared at Range Control or the assigned masks from Range Control.

**Padded gloves**

**Neck guard:** gator, scarf or nylon mesh guard.

**Groin protection:** cup or padding.

3. The following unit equipment is required

**Radio:** Each unit will check out at least 1 radio from Range Control to contact when going hot and going cold as they would on any live-fire range.

**Fire truck/trailer:** for washing structures and vehicles.

**Dedicated MEDEVAC/emergency vehicle:** This vehicle must be *dedicated* for the sole purpose of evacuating any injured personnel from the range complex.

4. The following is a list of additional **SUGGESTED** equipment:

**Knee and elbow pads**

**Body Armor Vest or Flak Vest**

**Blow horn or whistle:** for mass notification of safety violations and signaling cease fire as well as commencement of event

## SAFETY BULLETIN

### SBOI-016 PAINTBALL REQUIREMENTS

April 2001 (Initial)

With hundreds of paintballs traveling over 200 miles per hour across the field, there is only one thing that will protect your eyes from severe injury; your goggles and mask system. The statistics say it all, more than 99% of all serious paintball injuries occur when players use the wrong type of goggles, or no goggles at all. The Fort Riley Bunker One Paintball Course requires an individual to wear approved goggles by the American Society for Testing and Material (ASTM). There are a few basic rules to paintball gun safety.

First and foremost, never wear anything but approved goggles, or mask systems that are specifically used with paintball guns.

Never wear shop, ski, military , or motor-cross goggles.

Never remove your goggles on the field, or in the elimination zone.

When you are eliminated from the playing field, call "Out" as loud as possible, raise your hand and walk off the field. Do not remove your goggles, or mask system until you are back at the safe zone or in the staging area-

Don't argue with the referees or judges. If a referee calls you out, simply leave the playing field. The refs are there to help you have fun and to keep it safe. Listen to them at all time.

Never fire your paintball gun when there are people near you (this includes yourself) not wearing the proper paintball approved goggles.

Never fire your paint-gun when you are in the designated safe zone, or anywhere that is not on the playing fields.

Make sure your barrel-plug is in your barrel at all times when not on the playing field.

Finally, always keep the safety in the "safe" position and if your gun has a power feed, keep it in the "off" mode when not playing the game.

According to American Sports Data Inc., paintball has recently moved ahead of snowboarding as the fourth largest alternative sport in the United States. In order to keep the Fort Riley Bunker One Paintball Course safe as possible we must take responsibly and ensure that we wear the proper safety gear and follow all local rules.

## SAFETY BULLETIN

SAFETY BULLETIN

SAFETY BULLETIN

Use of Simunitions and Paintball Type Ammunition

8-1. GENERAL: Units conducting force on force training events that involve the use of simunition or paint ball type ammunition will observe the following rules of engagement and use the PPE specified herein.

- A. The following safety precautions and Rules of Engagement (ROE) will be observed during each force on force training event utilizing these types of ammunition:
  - 1) The Range Safety Officer (RSO) will conduct a range safety briefing prior to conducting training.
  - 2) The RSO will ensure that no SRTA, Frangible or Ball ammunition is present of the range.
  - 3) All training will stop upon the command “**CEASE FIRE.**” The RSO or any participant observing an unsafe act will sound this command.
  - 4) Shooters will not engage any personnel within two meters of the muzzle of their weapon.
  - 5) Shooters will follow any additional ammunition manufacturer’s safety precautions.
  
- B. The following is the minimum PPE to be worn by each individual participating or observing the force on force training event. The commander will also ensure that each training event has a formal risk assessment that includes the proper level of PPE based on the training scenario, level of experience of the participants and any other pertinent data affecting the training.
  - 1) Ballistic Eye protection
  - 2) Head, neck and face protection. A balaclava or other material to provide neck protection may be used as necessary.
  - 3) BDU’s, flight suits or other long sleeved shirts and trousers
  - 4) NOMEX flight gloves or other full-fingered gloves that provide protection and dexterity
  - 5) Groin cup or multiple layers of padding to provide protection
  
- C. PPE will be worn at all times and will not be removed until all weapons have been cleared.
  
- D. Medical coverage requirements are the same as for live-fire training.



APPENDIX F AGCW PAINTBALL TRAINING AREA SAFETY INSPECTION CARDS

Safety Standard	General Information	Go	No Go
(1) Paintball facility Standing Operating Procedures (SOP)	SOP will ensure employees have the information necessary to perform their tasks safely. Each worker will read the SOP or have the SOP read aloud to them. The SOP must be readily available at the facility. A risk assessment must be performed and incorporated into the SOP.		
(2) Paintball Safety Rules Posted	Participant safety rules must be conspicuously posted at the sign-in area. Every participant must be instructed to read the participant safety rules before signing up to play.		
(3) Area Signs Posted	Signs must be 4" x 12" minimum size		
"REGISTRATION AREA"	Posted at participant sign-in location.		
"RESTRICTED AREA"	Posted at off-limits areas for paintball participants and their visitors (i.e. jogging areas, public facilities, clubs, and housing areas).		
"TARGET RANGE"	Posted at target range.		
"PAINTBALL EVENT AREA"	Posted at main entrances to playing fields.		
"STAGING AREA OR NEUTRAL ZONE"	Posted at staging area or neutral zone.		
"CHRONOGRAPH"	Posted at the Chronograph Area.		
"GOGGLES ON"	Posted at every avenue of entrance to paintball event AREAS and any other area including chronograph and target range where paintball markers might be discharged.		
"BARREL PLUGS"	Posted at every exit from gaming areas and other areas where paintball markers might be discharged.		
"CAUTION, PAINTBALL EVENT AREA"	Posted at any locations where the operator or field inspector might expect unauthorized direct access to playing fields by outsiders not familiar to the sport.		
(4) Access to 911 or medical assistance	All fields operating staff must be trained to understand what to do in the event of an accident or emergency. All staff must know the location of readily accessible first aid kit, emergency instructions, and accident forms. There must be immediate access to 911 or medical assistance. A trained field staff person shall be designated to be available at all times (at a designated location) for emergencies.		
(5) Field orientation and safety briefing	Prior to their first paintball event of the day, every participant must be given a formal briefing on safety rules, paintball event rules, and field orientation. Emergency medical information will be reviewed, and a staff medical emergency location will be designated.		
(6) Proper barrel plug regulation	All participants are required to have paint marker barrels plugged or covered at all times other than while in paintball event areas, target range, or at the chronograph.		
(7) Adequate chronographing procedures	All field paintball markers must be chronographed before issuing to participants. All other paintball markers must be chronographed prior to any activity. Paintball marker velocities must be adjusted so that three consecutive shot thru the chronograph do not exceed: 300 FPS for outdoor general paintball events, 275 FPS for outdoor arena ball paintball events, 250 FPS for indoor speedball paintball events, 220 FPS for TOPGUN or other highly restrictive close-quarters competition.		
(8) External velocity adjusting devices and automatic paint marker are prohibited	Participants are not authorized external velocities adjusting devices that would allow a participant to increase their paint marker velocity without the staff permission. Paint marker which continues to cycle and fire as long as the trigger is held back is prohibited.		
(9) Adequate RSOs/safety monitors during paintball events	At least one Paintball Safety/safety monitor will be present for every 15 participants. At least two Paintball Safeties/safety monitors must be present on every outdoor field. At least on Paintball Safety/safety monitor must be present on every arena ball, speedball, or TOPGUN paintball field. All field Paintball Safety's/safety monitors must have been trained and exhibited a thorough understanding of the safety rules, and paintball event rules to their supervisor.		

APPENDIX F AGCW PAINTBALL TRAINING AREA SAFETY INSPECTION CARDS

(10) Goggles worn in "Goggles-on" areas	"Goggles-on" signs indicate all "goggles-on" areas. While in these areas, approved eye protection must be worn by all persons at all times. Approved eye protection shall require .06 lexan lenses positively secured within frames, secured to the head with a headband, and fully enclosing the eye cavity. UVEX goggles are not acceptable. Participants must not be permitted to remove goggles when leaving the playing field. Goggles must remain on until participants reach a "barrel plug" area (marked by a "barrel plug" sign).		
(11) Proper paint marker clearing procedures	Each playing field must have a clearly marked area or device where every participant exiting a paintball event is required to clear their paint marker before proceeding into any area where barrel plug are required.		
(12) Adequate Carbon Dioxide (CO2) station	CO2 must be chained to prevent falling over in storage and during use. Persons handling CO2 must be trained and certified by the supervisor. A scale is required to insure against overfills. All filling apparatus must meet Compressed Gas Association (CGA) requirements for the handling of compressed gasses.		
(13) Inspection of compressed gas cylinders	Each employee will be trained to utilize the Compressed Gas Association Pamphlets to determine that compressed gas cylinders under their control are in a safe condition. Reference 29 CFR 1910.101		
(14) Carbon Dioxide awareness training	Each employee will receive training in Carbon Dioxide awareness.		
General Description	Name: Carbon Dioxide Synonym(s): Carbonic acid gas; Dry Ice; CO2; Diesel Exhaust Component IMIS: 0530 CAS: 124-38-9 NIOSH: RTECS FF6400000 DOT: 1013 21 Description: Colorless, odorless gases; can be liquid or solid.		
Health Factors	Symptom(s): Headaches, dizziness, restlessness, pares thesis; dyspnea; sweating; malaise; increased heart rate, elevated blood pressure, pulse pressure; coma; asphyxia; convulsions; frostbite (dry ice) Health Effects: Simple Asphyxiant (HE17) Organ: Lungs, skin, CVS		
OSHA's recommendations for transferring carbon dioxide gas	<ul style="list-style-type: none"> <li>- Know the hazards.</li> <li>- Inspect and maintain all piping tubing, hoses and fittings at regular intervals and maintain the system in accordance with manufacturer's instructions.</li> <li>- Make sure there is adequate ventilation even when carbon dioxide is delivered in enclosed areas or below grade locations that are not confined spaces.</li> <li>- Develop and implement procedures to monitor the atmosphere for CO2 and provide local ventilation where levels may exceed the permissible exposure limit. (Recommended Exposure Limit: 5000 ppm TWA; 30,000 ppm STEL).</li> <li>- Place appropriate warning signs outside areas where high concentrations of the gas can accumulate.</li> <li>- Provide proper lighting to enable workers to work safely.</li> <li>- Install new carbon dioxide receptacles at ground level in an open area. All fill stations not at aboveground level must follow the requirements of OSHA's permit-required confined space standard.</li> </ul>		

APPENDIX F AGCW PAINTBALL TRAINING AREA SAFETY INSPECTION CARDS

(15) Safe staging area	Each staging area must be designed in a location or manner such that stray paintballs cannot enter from areas such as playing fields, target areas, or chronograph areas. Staging areas and neutral zones may be protected by a minimum of 300 feet of open space, or natural growth, which prevents ball penetration, or a constructed barrier. "Barrel Plug" signs must be posted at entrances o the staging area from the playing field(s).		
(16) Safe paintball event area	Boundaries of all outdoor paintball playing fields must be clearly and continuously marked with rope, tape, or other highly visible material. The marker must be a CONTINUOUS UNBROKEN line (i.e. NOT MERELY RIBBONS TIED TO TREES). If the boundary rope/tape is strong enough to trip a human without breaking. The rope/tape must be hung at least seven feet off the ground at its lowest point and the rope must be brightly colored (or have colored ribbon attached every 3 feet). Any area with hidden danger such as water, cliffs, or sharp objects must be roped off, posted, or plainly identified. Playing fields must be free of barbed wire, broken glass, and other dangerous litter. All obstacles must be constructed and positioned in a manner to prevent them from falling. Staircases with more than four steps must be a neutral zone. No ladders permitted in play. No tree stands.		
(17) Parental consent waiver	Parental consent waivers are required for participants ages 10 to 17. Additional staff is required to supervise 10 to 17 years old children OFF TH FIELD. At least one adult supervisor (perhaps an adult who accompanies the children) with no other staff duties is required for every four children.		

## IMPORTANT NOTICE

CPaintball Marker: Rampage, Black Maxx and Trracer SA  
Potential Safety Concern Dealer and Consumer Safety Product Advisory

PMI is investigating a potential condition, which may exist with some Rampage, Black Maxx and Trracer SA paintball markers manufactured by PMI. PMI has received reports that the polymer body cracks if or when the gas source (CO2 tank) becomes over-pressurized from sustained exposure to direct sunlight, other heat sources, or from over filling of the gas source. The over-pressurized condition of the gas source (exceeding the rated 3000PSI), may result in the polymer gas chamber within the marker cracking, which may cause pieces of the polymer body to forcibly dislodge from the marker.



PMI has received reports of such instances relating to Rampage paintball markers only! The burst disk on the CO2 tank valve(s) did not activate at rated pressures in these circumstances. No serious personal injuries have been reported. Nevertheless, to be overly cautious, PMI would appreciate your cooperation in immediately removing all Rampage, Black Maxx and Trracer SA paintball markers from sale. Also, please provide PMI with the identities and

contact information for any purchasers to the extent known to you. PMI is notifying the Consumer Product Safety Commission of this potential condition with regards to the Rampage paintball markers.

Please return at no cost Rampage, Black Maxx and Trracer SA paintball markers in your possession purchased prior to August 15, 2001 to PMI, and PMI will upgrade, retrofit and return these paintball markers to eliminate this potential condition. Likewise, feel free to contact PMI as follows:

ATTN: Mike Lukas  
Pursuit Marketing, Inc. (PMI)  
5035 River Road  
Schiller Park, IL 60176

Or by telephone or fax at:  
(847) 233.9900 (phone) ext. 7157  
(847) 233.9901 (fax)

Or by email at: [mlukas@pminetwork.com](mailto:mlukas@pminetwork.com)

## Pure Energy CO2 Tank Potential Safety Concern

Schiller Park, IL - Pursuit Marketing Inc. (PMI) has become aware of a potential safety concern regarding its Pure Energy CO2 tank-valve assemblies purchased before July 11th, 2000. All dealers and consumers are asked to review this notice and inspect all Pure Energy CO2 tank-valve assemblies.

This inspection will only take a few moments. If you do not feel confident that you can correctly complete this inspection, take your tank-valve assembly to your local paintball supplier for them to complete the inspection or return your tank-valve assembly (after completely emptying all the CO2 from it) to: Pursuit Marketing Inc., 5035 River Road, Schiller Park, Illinois 60176. Pursuit Marketing Inc. will reimburse all shipping charges.

Please consult the diagram below. The burst disk-retaining nut is the part requiring inspection. This part screws into the valve and does not need to be removed from the valve to complete this inspection.

Look closely at the burst disk-retaining nut, it is hexagonal in shape. The nut should contain two holes drilled through the tightening face (the part you would use a wrench to tighten). These holes allow the release of CO2 from the tank, if the burst disk is activated by over-pressurization of the tank. This would occur due to over-filling or over-heating of the tank which could cause the tank to rupture. If you discover a burst disk-retaining nut that does not have these holes please return the entire Pure Energy CO2 tank-valve assembly (after completely emptying all the CO2 from it) to Pursuit Marketing Inc., 5035 River Road, Schiller Park, Illinois 60176 for replacement. A reward will be offered to all persons returning any tank-valve assembly meeting the description above.



Pursuit Marketing Inc. has always promoted safety in our sport. We believe it is important for all manufactures to bring any potential safety concerns to the attention of the public as soon as possible. If further clarification of this notice or if more information is required please contact: Michael Lukas at Pursuit Marketing Inc., 800-334-0502 ext 7157 or via e-mail: [mlukas@pminetwork.com](mailto:mlukas@pminetwork.com).

## **Dealer and Consumer Product Advisory**

**As an industry leader in the Paintball business PMI assumes the obligation as a public service to notify all dealers and retail consumers of potential safety issues as they arise.**

The replacement will only take a few moments. If you do not feel confident that you can correctly complete this replacement, take the tanks to your local paintball supplier for them to complete the replacement or return your tank to PMI.

ATTN: Unified Disc Offer, 5035 River Road, Schiller Park, Illinois, 60176

The burst disc is the part to be replaced. Wearing appropriate safety goggles, you must first empty your CO<sub>2</sub> tank completely. Next, you must unscrew the burst, disc-retaining nut and remove it from the tank. This part screws into the flat surface on the side of the valve and needs to be removed from the valve to complete the replacement.

After removing the burst disc-retaining nut, look into the resulting opening. You should see the burst disc at the bottom of the opening. This disc acts as a safety release if the tank is over pressurized. The disc is a copper metallic color and must be removed along with the Teflon washer contained in the opening. The washer and disc should fall out of the opening if you invert the tank so the opening is facing downward. If the disc and washer do not fall out freely, you can use a very small screwdriver to assist you in removing them.

After completing the removal of the current burst disc assembly, take the new unified burst disc assembly and screw it into the opening. This should be screwed in by hand and then tightened up with a wrench. Do not over tighten. You may now refill the tank. If you are unable or do not feel confident with your ability to complete this work, contact your local paintball retailer or return your tank to PMI, ATTN: Unified Disc Offer, 5035 River Road, Schiller Park, Illinois, 60176. PMI will replace the disc and return the tank to you at no charge.

PMI has always promoted safety in our sport. We believe it is important for all manufactures to bring any potential safety concerns to the attention of the public as soon as possible. If further clarification of this notice or if more information is required please contact: Michael Lukas at Pursuit Marketing Inc., 800-334-0502 ext 7157 or via e-mail: [mlukas@pminetwork.com](mailto:mlukas@pminetwork.com).

## APPENDIX H PAINTBALL RELATED EYE INJURY ARTICLES



September 15, 2004:

**blink of an eye, University of Michigan vision experts warn**

**Paintball injuries can happen in the**

**ANN ARBOR, MI** - Paintball injuries are sending more and more patients to the emergency room every year, including one teenager who wandered into his neighbor's backyard at just the wrong moment.

Shahzad I. Mian, M.D., cornea and cataract surgeon at the [University Of Michigan Kellogg Eye Center](#), treated the teen. Now he warns other patients that this is a high-risk sport that can cause injuries ranging from bleeding to the loss of an eye.

The teenager was an innocent bystander to a paintball event of “backyard” paintball. “The paintball hit him in the eye and caused a laceration to the cornea,” says Mian. “We rushed him in for emergency surgery the same day as the injury.” He later developed a [cataract](#), due to trauma to the eye from the initial impact.

Mian performed another surgery to remove the cataract and replaced it with a permanent intraocular lens implant. In the beginning stages of his recovery, the teenager could detect only hand motions with his injured eye. In time, his vision in the injured eye improved to 20/30. “After the injury and subsequent surgeries, I would say he was one of the lucky ones,” says Mian.

The incidence of paintball eye injuries treated in emergency rooms has risen from an estimated 545 in 1998 to approximately 1,200 in 2000, according to a recent report in the journal [Pediatrics](#). Many of these injuries result when people – mainly young people – play paintball without protective eyewear in an unsupervised setting.

Of the 42,000 sports-related eye injuries that occur each year, most paintball injuries occur when participants are hit with the small, gelatin capsules. These projectiles are filled with nontoxic water-soluble paint and are fired from markers at a velocity of 300 feet per second.

The size (diameter of 17 millimeters and weight of 3.5 grams) and speed of the paintball make it a particularly dangerous projectile. About the size of a marble, the paintball is small enough to bypass the protective bones surrounding the eye, and can hit the eye itself with full force.

“To avoid these types of injuries, one thing you can do is play on a regulated field and keep your facemask on until the paintball event is complete and you are off the field,” explains Mian. “I would prefer to tell my patients not to play the paintball event but, if they do choose to play, I recommend they use eyewear that is designed specifically for paintball and meets industry standards.”

There are 2,500 commercial paintball fields in the United States, and most have tightened their safety rules. Yet, Dr. Mian treated a man in his 30s who briefly removed his facemask while still on the field of play and was struck in the eye. “The force of the paintball caused bleeding inside the eye.

Once the blood was absorbed back into the eye, a healing process that can take a period of days to weeks, he also developed a cataract,” says Dr. Mian. Much like the other patient, he initially could detect only hand motions with his injured eye. However, eventually he regained 20/20 vision.

## APPENDIX H PAINTBALL RELATED EYE INJURY ARTICLES

If you suffer an eye injury from paintball, Dr. Mian recommends seeing an ophthalmologist or visiting the nearest emergency room as soon as possible, even if the injury seems minor at first.

To minimize damage immediately following the injury, follow these sight-saving tips:

- Do not rub the eye. If any tissue is torn, rubbing may cause more damage.
- Cover the eye. To do this, secure a shield against the bones surrounding the eye.
- Do not apply ointment or medication to the eye. These medications may not be

sterile.

- Avoid aspirin, ibuprofen or other non-steroidal, anti-inflammatory drugs. These drugs can thin the blood and may increase bleeding.

The U-M Kellogg Eye Center is a nationally recognized center for vision care and research. As a part of the [University of Michigan Health System](#), Kellogg attracts top funding for research to save vision, offers professional and community education, and provides routine and highly specialized eye care to some 100,000 patients each year.

*Contact:* Aimee Bergquist, [aimeesb@umich.edu](mailto:aimeesb@umich.edu), 734-763-4660

**Vision-threatening Paintball Injuries on the Rise  
Special precautions are needed to avoid serious injuries**

As the popularity of paintball has increased over the past several years, so have eye-related injuries. The paintball event is played with gelatin balls measuring about 0.68 of an inch in diameter that are filled with water-soluble paint. When fired through a marker at 300 feet/second, they turn into small missiles. Injuries with this sport are often serious because the paintball fits perfectly in eye socket, increasing the risk of perforating the globe.

According to American Sports Data Inc, the number of paintball participants has increased to over 6.4 million in the past ten years. **An estimated 2,000 eye injuries were treated in emergency rooms between 1997 and 1999, but that number excludes private office visits, an impossible number to track.** Interestingly, most injuries don't occur mid-paintball event. Instead, they're more likely to occur at the very end of the paintball event when the goggles have been removed because the participant is hot, or just finished playing.

Paul F. Vinger, MD, clinical professor of ophthalmology at Tufts University, reports that most injuries involve unsupervised children. Trends in the sale and marketing of paintball gear may impact the number of injuries among school-aged children. Discount stores now carry markers and paintballs, making it easier and less expensive for youth to get involved in the paintball event. Many believe that paintball marker sales should be limited to marker stores and require a license.

Ophthalmologists stress the importance of eye protection during the paintball event. **"There are many types of eye injuries that can result from this sport," says James Sanderson, MD, oculoplastic surgeon.** "In addition to the problems that threaten the eye itself, the bones and tissues surrounding the eye are very fragile." Anterior segment surgeon James Rowsey, MD cautions, "The severity of the injuries caused by paintball should make participants and especially parents doubly cautious with these devices."

*Sources: EyeWorld, Dec. 12, 2000; U.S. News, Aug. 14, 2000*

*This article was updated on 12/13/2000*

## APPENDIX I MEDEVAC GUIDELINES

### 1. Medical Requirements

a. A competent medical aid person or combat lifesaver with appropriate medical supplies and a dedicated evacuation vehicle must be present at the paintball training area during training.

b. If medical support has been committed to an evacuation, no hazardous activities will be resumed until the medical aid person, medical equipment, and evacuation vehicle have returned to the activity area and are available to resume standby duty.

### 2. Emergency MEDEVAC Procedures.

a. Ground evacuation. Call 911, then contact Range Operations on Range Radio or phone at (801) 253-5733. In routine accidents and minor injuries, the injured may be evacuated by the litter-bearing vehicle to the range gate on Redwood Road to wait for transport by outside emergency vehicles.

b. Air Evacuation. Call Life Flight at 801-581-2991. Upon arrival of the helicopter, smoke should be used to mark the helicopter landing zone (HLZ). Use frequency 155.150 on UHF if available or relay information through Range Control. In hours of darkness, vehicle headlights will be used to mark the HLZ, if advised by Range Control.

c. Follow the standard Army 9-line MEDEVAC reporting requirements.

d. Unit will follow all instructions from Range Control from this point on.

## APPENDIX J PAINTBALL SAFETY BRIEFING

### 1. Safety.

- a. Some buildings have mouse holes (holes in floor). Be aware these holes may not be covered.
- b. No physical contact will take place between the offensive and defensive units.
- c. **Furniture will not be removed from the buildings, thrown out window, dropped through mouse holes or placed in a manner where it will fall or swing. Furniture that is broken or damaged through use by a unit will be removed and placed on the curb. Paintball Cadre will be informed of any damage that occurs.**
- d. **EVERYONE** on the Paintball Training Area will wear protective headgear and paintball approved goggles.
- e. Markers will not be aimed directly at individuals who are closer than 2 meters. Markers will not be fired when plugs are in place, when someone is not wearing their mask, when a “cease fire” is called, at bystanders, at persons out of play, at “DEAD MEN” or during emergency procedures.
- f. Practice, smoke grenades, and pyrotechnics will not be thrown directly at another person.
- g. Smoke grenades and pyrotechnics will be used on the outside of buildings only. NO HC SMOKE IS AUTHORIZED.
- h. Smoke grenades and pyrotechnics will not be placed in the sewer.
- i. No fires are allowed on the Paintball Training Area.
- j. Vehicles placed in the facility will not be moved without the permission of the paintball cadre.
- k. The following procedures apply to rappelling and grappling hook operations.
  - 1) Current Rappel master must be present at any rappelling events.
  - 2) Only authorized (red) anchor points will be used for rappel operations and must be inspected prior to their use.
  - 3) Personnel who rappel are required to be proficient in tying Swiss seats, method of hooking up, and methods of rappelling.
  - 4) All personnel will be checked by a rappel master prior to going on rappel to ensure they do not have a fatal hook-up.
  - 5) Double rope is required for all rappel operations.
  - 6) Belay personnel will be used on all ropes.
- m. Ladders and climbing devices will be capable of supporting the weight of a fully loaded soldier. Personnel using these devices will ensure that they are supported / secured before climbing.
- n. Smoke grenades and pyrotechnics will not be used or thrown into any building.
- o. Booby traps will be placed below waist level.
- p. All tracked and wheeled vehicles will move IAW the Paintball SOP.
- q. Rappelling from helicopters is prohibited on A-frame roofs.
- r. Helicopters will not disembark personnel onto A-frame roofs.
- s. Personnel traveling through smoke will wear protective masks.
- t. Stay off the roofs of the wooden shanties

## APPENDIX J PAINTBALL SAFETY BRIEFING

u. No one will maneuver outside the Paintball Training Area. The boundaries are as follows:

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### 2. Administrative.

a. Only portable latrines and fixed latrines will be used for personal relief. Portable latrines will not be moved or used for tactical operations. Portable latrines are required for units occupying the PAINTBALL Site for 24 hours or more (one portable latrines per 20 individuals). Contact ext 5733 for coordination.

b. No fighting positions or trenches will be dug.

c. All administrative vehicles will be parked outside the Paintball Training Area during tactical dismounted operations.

d. The ambulance or designated medical vehicle will be stationed at \_\_\_\_\_.

e. All operations will stop when you see RED smoke or hear whistle or hear “CEASE FIRE” from a blow horn.

f. Obey all instructions from the controllers and paintball personnel.

g. The target motors and mounting brackets located in the PAINTBALL buildings will not be tampered with in any way. No one should pull or swing from the mounting brackets. Do not attach trip wires or booby traps to the targetry.

### 3. Safety checks.

#### a. PPE: Uniform IAW SOP

- Paintball goggles (approved at 300fps)
- Padded Gloves
- Groin protection
- Boots and ankle protection as needed
- Long sleeved padded shirt
- Long padded pants
- Elbow pads
- Knee pads
- Head gear WWII helmet

#### b. Equipment checks

- PMCS as per user’s manual
- No air tank leaks
- Barrel clear of debris and paint residue
- Hopper sits firmly in port
- Barrel and butt-stock firmly attached to Tippman M98
- Oil applied as needed to bolt and air attachments

#### c. Range Requirements

- Boundary markers in place
- Warning markers in place and legible
- Terrain walk/orientation
- Safety Inspection conducted
- Safety Briefing conducted
- Convoy Briefing conducted

## APPENDIX J PAINTBALL SAFETY BRIEFING

### 4. Convoy Brief.

- a. Convoy assignments and manifest.
- b. Map orientation and Convoy Route.
- c. Actions on.
- d. Safety (Refer to Chapter 3)
- e. Contingencies (Refer to Chapter 3)

### 5. Questions.

### 6. Summary.                    THINK SAFETY!

APPENDIX K LIABILITY WAIVER FORM

**THIS IS A CIVILIAN RELESE OF LIABILITY-**  
**READ BEFORE SIGNING**

**Note: this form must be read and signed before the participant is allowed to take part in any paintball event.**

In consideration of being permitted to participate in any way in a paintball event on Camp

Williams, I (print full name) \_\_\_\_\_

SSN \_\_\_\_\_ acknowledge, appreciate, and agree that:

1. The risk of injury from the activity and weaponry involved in paintball is significant, including the potential for permanent disability and death, and while particular protective equipment and personal discipline will minimize this risk, the risk of serious injury does exist.
2. I knowingly and freely assume all such risks, both known and unknown, even if arising from the negligence of those persons released from liability below, and assume full responsibility for my participation and
3. I understand that the activities of paintball are physically and mentally intense. I understand the rules of engagement and safety rules and will comply with all rules and regulations. If I observe any unusual or unnecessary hazard during my participation, I will bring such to the attention of the nearest Range OIC, RSO, and/or Paintball safety's soon as practical; and,
4. I, myself and on behalf of my heirs, assigns, personal representatives and next of kin, hereby release and hold harmless The Utah National Guard, Army Garrison Camp Williams, or the owners of premises used to conduct the paintball activates, their officer's, officials, agents and/ or employees ("releasees"), with respect to any and all injury, disability, death, or loss or damage to person or proper, whether by negligence and/or wanton misconduct.
5. I understand and agree that this release of liability agreement covers each and every paintball activity and event in which I participate hereafter.

**I have read this release of liability and assumption of risk agreement, fully understand its terms, understand that I have given up substantial rights by signing it, and sign it freely and voluntarily without any inducement.**

Participant's Signature

X \_\_\_\_\_

Date Signed: \_\_\_\_\_ Phone# \_\_\_\_\_

Email \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_, State \_\_\_\_\_ Zip Code \_\_\_\_\_

## APPENDIX L USEFUL WEBSITES

### Paintball Safety

<http://www.paintballsafety.com/>

<http://rustyspaintballgear.tripod.com/rustyspaintballgearmain/id16.html>

[http://207.239.115.202/index/PaintBall\\_Safe.html](http://207.239.115.202/index/PaintBall_Safe.html)

[http://www.orbitalpaintball.com/Info/safety\\_rules.html](http://www.orbitalpaintball.com/Info/safety_rules.html)

### Paintball Safety (10 Commandments)

<http://www.palmer-pursuit.com/PBSafety/>

### College Paintball

[http://www.angelfire.com/extreme2/ViciousVikings/PAINTBALL\\_101.htm](http://www.angelfire.com/extreme2/ViciousVikings/PAINTBALL_101.htm)

### Paintball 101 (includes discussion of playing fields)

<http://www.paintballstore.com/paintball101.htm>

### Paintball games and rules

<http://www.geocities.com/colosseum/loge/4039/games.html>

<http://www.geocities.com/colosseum/loge/4039/games2.html>

### Paintball eye injury

<http://www.paintballtimes.com/eyeinjuries.htm>

### Building your field

<http://www.paintcheck.com/fieldowner/3buildingyourfield.html>

## APPENDIX M PAINTBALL SAFETY TRAINING

1. Understand hazards and proper controls involved in the safe execution of a Paintball Engagement.
  - a. Read and understand the injuries involved with paintball engagements; see Appendix H.
  - b. Read and understand Product advisories for paintball equipment; see Appendix G.
  - c. Develop a sound Risk Assessment for paintball engagements: list eye injuries, minor bruises and lacerations, fatigue, and exposure.
2. Understand Paintball equipment manufacturer's safety recommendations and warnings.
  - a. Find safety recommendations for all markers, CO2 tanks, and PPE.
  - b. Understand manufactures labels.
  - c. Minimum rating for paintball masks is 300 feet per second (fps)
3. Paintball Markers
  - a. Find and understand manufacturer's safety precautions for markers.
  - b. Maximum setting for markers indoors is 220 fps.
  - c. Maximum setting for markers in outdoor engagements is 260 fps.
  - d. Name each part of the marker: Marker, barrel, butt, trigger, safe, barrel plug, air speed adjustment, CO2 container, and CO2 remote.
  - e. Demonstrate proper use of paintball marker:
    - i. Use barrel plug at all times except when the RSO commences the engagement with whistle or blow horn.
    - ii. Replace barrel plug anytime some one without proper PPE is inside the paintball field or within 200 meters of the marker barrel.
    - iii. Adjust airspeed settings (fps) of the marker.
    - iv. Paintball markers are not built like military grade: Don't ever use marker to break your fall.
    - v. Be aware of where your barrel is pointing at all times even with barrel plug in place or safety on.
    - vi. Demonstrate how to enforce the limits of engagement on the paintball training area. Minimum safe distance for paintball engagements is 2 meters or 3 yards.
4. Paintball ammunitions.
  - a. Find and understand Manufacturers Safety Data on paintball ammunition.
  - b. Understand the different calibers of paintball: .68 and .43.
  - c. Understand the general characteristics of paintball ammo.
    - i. Shell must be water-soluble and biodegradable.
    - ii. Differences in shell thicknesses: any thickness is authorized for use on Camp Williams, but the effects must be reflected in the unit's Risk Assessment.
    - iii. Fill qualities and attributes:
      1. Water-soluble/biodegradable fills are the only paintball fills authorized for use in Camp Williams training events.
      2. Although cold temperature fills were manufactured for close to freezing temperature, no paintball engagements are authorized on Camp Williams property when the ambient temperature is 32° F or below.
5. Establish Paintball Training Areas and enforce boundaries.

## APPENDIX M PAINTBALL SAFETY TRAINING

- a. Establish a Paintball Field and a Paintball buffer Zone IAW this SOP on a map and geographical on one of the authorized Paint ball Training Areas on Camp Williams.
- b. Demonstrate how to enforce boundaries of the Paintball Field and training area: clearly define boundaries, stop all activity, and report to Range Control.

APPENDIX N OUTDOOR/INDOOR AIRSPEED TABLES

*Safe Airspeed Velocity for OUTDOOR Paintball Cold Weather Use*

**Directions:** Determine the outdoor temperature. Find the corresponding temperature below. Adjust the paintball gun's velocity to correspond in the white range only.

White area represents safe airspeeds for warm-weather paintballs.  
 Black area represents unsafe airspeeds for warm-weather paintballs  
 Only cold-weather paintballs are safe to use at temperatures 32° F and below. Most retailers carry these paintballs.

**OUTDOOR TEMPERATURE DEGREES in FAHRENHEIT**

Feet Per Second	32° and below	34°- 35 °	36 °- 37 °	38 ° - 39 °	40 ° - 44 °	45 ° and above
290 FPS	Black	Black	Black	Black	Black	White
280 FPS	Black	Black	Black	Black	Black	White
270 FPS	Black	Black	Black	Black	Black	White
260 FPS	Black	Black	Black	Black	Black	White
250 FPS	Black	Black	Black	Black	Black	White
240 FPS	Black	Black	Black	Black	Black	White
230 FPS	Black	Black	Black	Black	Black	White

*Safe Airspeed Velocity for INDOOR Paintball Cold Weather Use*

**Directions:** Determine the temperature indoors. Find the corresponding temperature below. Adjust the paintball gun's airspeed to one in the white area.

White area represents safe airspeeds for warm-weather paintballs.  
 Black area represents unsafe airspeeds for warm weather paintballs  
 Only cold-weather paintballs are safe to use at temperatures 32° F and below. Most retailers carry these paintballs.

**INDOOR TEMPERATURE DEGREES in FAHRENHEIT**

Feet Per Second	32° and below	34°- 35 °	36 °- 37 °	38 ° - 39 °	40 ° - 44 °	45 ° and above
260 FPS	Black	Black	Black	Black	Black	White
250 FPS	Black	Black	Black	Black	Black	White
240 FPS	Black	Black	Black	Black	Black	White
230 FPS	Black	Black	Black	Black	Black	White

APPENDIX P RISK ASSESSMENT WORKSHEET

ARNG Composite Risk Management Worksheet  
(The proponent is NGB-AVN-S)

1. Organization and Station: Training Site Command, Camp Williams Utah										1. Page 1 of 2				
3. Mission/Task:  Paintball Force- on force training: CQM, and Infantry Lanes					4. DTG Begin: 0800 27 AUG 06			5. DTG End: 1200 27 AUG 06			6. Date Prepared: 29 DEC 05			
7. Standards, SOPs, and References that will be used to implement Mission/Task Control Options and Countermeasures for Hazards:  AR 385-63, DA PAM 385-63, USASOC reg 385-, and AGCW Paintball SOP														
8. Prepared by: (Rank/Name/Duty Position)CPT Joe Snuffy, 141st ADA														
9. Identified Hazards:			10. Initial Risk Level:		11. Control Options and Countermeasures for Identified Hazards:				12. Remaining Risk Level:		13. Supervision by: (Continuous, Buddy System, SITREP, etc.)		14. Were Controls Effective?	
(Be Specific)			L M H E		(Be Specific)				L M H E		(Be Specific)		(From AAR)	
<b>Wild animals (snakes, ticks etc):</b> hospitalization			X		Safety brief, individual awareness, leave all animals alone.				X		OIC, continuous			
<b>Dehydration or other heat related injury:</b> minor casualty, hospitalization or death					Safety brief, individual and leader awareness, PCC/PCI 0700 to 0800 for adequate water supplies.				X		OIC, buddy system, & continuous			
<b>Operating in rough terrain:</b> sprained ankles, broken limbs, etc.					Safety brief, individual and leader awareness, Paintball safeties monitor all movements				X		OIC/RSO, buddy system & continuous			
<b>Fatigue:</b> Operating in large training paintball training area and paintball field			X		Safety brief before execution, enforce 4-hour work rest cycles.				X		FLL, continuous			
<b>Injuries from Paintball impacts:</b> Eye injuries					Assign OIC< RSO and paintball safety. Safety briefing prior to execution on potentiality of injury. Establish buffer zone and paintball boundaries. Wear PPE				X		CDR, OIC, RSO, PB safety, buddy system, continuous			
Minor bruises and lacerations from Paintball impact			X		Same as above				X		Same as above			
15. Remaining Risk Level After Countermeasures Are Implemented: (CIRCLE HIGHEST REMAINING RISK LEVEL)➔					LOW		MEDIUM		HIGH		EXTREMELY HIGH			
16. RISK DECISION AUTHORITY: (Approval Authority Signature Block) _____  (Rank/Name/Title)														

APPENDIX P RISK ASSESSMENT WORKSHEET

ARNG Composite Risk Management Worksheet Continuation

1. Organization and Station: Training Site Command, Camp Williams Utah					2. Page 2 _____ of 2 _____									
3. Mission/Task: Paintball Force-on-force training: CQM, and Infantry lanes.														
8. Prepared by: (Rank/Name/Duty Position) CPT Joe Snuffy, 141st AD														
9. Identified Hazards:		10. Initial Risk Level:			11. Control Options and Countermeasures for Identified Hazards:			12. Remaining Risk Level:		13. Supervision by: (Continuous, Buddy System, SITREP, etc.)	14. Were Controls Effective?			
(Be Specific)		L	M	H	E	(Be Specific)			L	M	H	E	(Be Specific)	(From AAR)
<p><b>Operating Paintball equipment:</b> Misuse could result in injuries to limbs or eyes.</p> <p><b>UXO:</b> possibility of coming across UXO could cause loss of life, limb, or eye sight.</p>					X	<p>Safety brief, individual and leader awareness, and assigned safeties. Train safeties on precautions, and safety requirements for use. Wear proper PPE.</p> <p>AGCW awareness brief, safety brief, and leader/individual awareness.</p>			X				<p>RSI, buddy system and continuous</p> <p>NCOIC, continuous</p>	

NGB Form 100-14-1, JULY 99, (Form Flow v 2.15)

## DOING THE FILL

### A SCALE IS REQUIRED TO PROPERLY FILL CO2 BOTTLES!

#### OPERATION 1: CHECKING OUT THE BOTTLE

In order to properly fill a CO2 bottle, you need some basic information, all of this information comes right off the Federally required stamped markings on the bottle. The stamping will look similar to the line shown below:

DOT – 3AL 1800 H5058 MFG 04^94 – 20 OZ CO2

#### WHAT DOES IT MEAN??

DOT 3AL 1800 H5058 MFG 09-02 20 OZ CO2	Department of Transportation (a Federal Agency). The specification standard the bottle conforms to. The working pressure rating of the bottle. The model and manufacturer of the bottle. The production date of the bottle The amount of CO2 the bottle is rated to hold.
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In the United States, it is Federal Law that any gas storage vessel over two inches in diameter must be periodically re-tested. If the bottle is steel or aluminum, it must be re-tested every five years. **IF THE PRODUCTION DATE ON THE BOTTLE INDICATES THAT THE BOTTLE IS MORE THAN 5 YEARS OLD, DO NOT FILL IT UNLESS THERE ARE ADDITIONAL STAMPINGS INDICATING THAT IT HAS BEEN RE-TESTED.**

#### NEVER PUT MORE THAN THE RATED AMOUNT OF CO2 INTO A BOTTLE!!

If you find that there is no marking or label on the bottle that indicates the proper amount of CO2, DO NOT GUESS! If you are not sure what the rated fill is, do not fill the bottle.

Since a correct CO2 fill is determined by weight, your first action will be to vent any residual CO2 in the bottle so that you can establish an accurate empty weight.

THE ONLY WAY YOU CAN BE SURE A CO2 BOTTLE IS COMPLETELY EMPTY IS IF IT IS WARM TO THE TOUCH, AND SHOWS NO INTERNAL PRESSURE.

The general condition of the bottle is also important. Always take a moment to examine the bottle for dents, gouges or other significant damage. Do not fill a bottle that has been abused or damaged. Reference CGA pamphlet CGA C-6 and CGA C-6.1

#### OPERATION 2: HOOKING UP!

**NOTE: A SCALE, PREFERABLY WITH A ZERO FUNCTION IS REQUIRED!!!**

**Step one: Attachment.** MAKE SURE THE ON – OFF KNOB AND THE VENT KNOB ON THE FILL STATION IS IN THE OFF POSITION. Screw the bottle into the fill adapter.

**Step two: Purging.** Purge off the residual CO2 in the bottle. It is necessary to do this because you must establish the empty weight of the bottle. The transfer from the bulk tank also depends on the pressure in the receiving bottle to be lower. You do this by inverting the bottle so that the valve is at the bottom, and turning the knob on the fill adapter clockwise to depress the valve pin. The "Inverted Dump" is used because it prevents excessive chilling of the bottle, and subsequent dry ice formation.

**Step three: Weighing.** When there is no residual CO2 in the bottle, remove the bottle from the fill adapter, and weigh the bottle to determine the Empty Weight.

**Step four: Filling.** Zero out the scale, and re-attach the bottle to the Fill Adapter. Open the On-Off valve on the bulk tank. Open the on-off knob on the fill station. The gas will start to flow into the paintball bottle. **WATCH THE SCALE! DO NOT FILL THE PAINTBALL BOTTLE BEYOND ITS RATED CAPACITY. STOP THE TRANSFER WITH THE ON-OFF VALVE ON THE FILL STATION WHEN THE PAINTBALL BOTTLE IS FILLED TO ITS RATED CAPACITY.** If you are finished with refill operations, close the On-Off valve on the Bulk Tank

**Step five: Disconnecting** Turn the knob on the bottle adapter counterclockwise to allow the pin valve in the bottle to close. Open the vent knob to vent any CO2 that may be trapped in the hose. Unscrew the bottle from the fill adapter.

**Step six:** Final weighing. Re-weigh the bottle to make sure the weight is correct.

**THIS IS THE MOST IMPORTANT STEP IN THE WHOLE OPERATION! DO NOT OMIT IT!!!**

## DELUXE MINI CO2 FILL STATION

UNITED STATES PATENT NUMBER 6,263,927,B1

### **SAFETY FIRST!**

**NOTE: THIS FILL STATION IS NOT INTENDED FOR HIGH VOLUME COMMERCIAL USE!!**

**ALWAYS WEAR EYE PROTECTION WHEN WORKING WITH COMPRESSED GAS! VENTING GAS DOES ACCELERATE PARTICLES OF DIRT AND DEBRIS TO HIGH VELOCITY. KEEP ALL PERSONS WITHOUT EYE PROTECTION OUT OF THE IMMEDIATE AREA!**

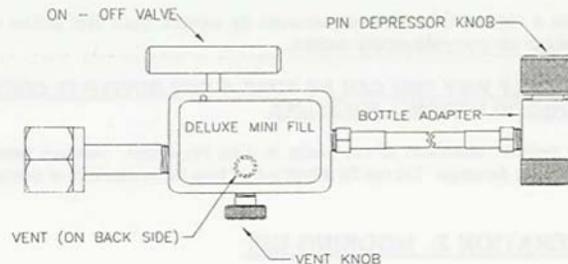
**ALWAYS WEAR GLOVES TO PROTECT YOUR HANDS FROM EXTREME COLD. THE ACTION OF VENTING DOWN A CO2 BOTTLE CAN PRODUCE TEMPERATURES AS LOW AS -130 F. IMMEDIATE AND DESTRUCTIVE FREEZING OF EXPOSED FLESH IS POSSIBLE.**

**THE FILL STATION MUST BE USED IN AREAS WITH ADEQUATE VENTILATION!!**

### SETTING UP THE FILL STATION

Before you even remove the safety cap on the bulk cylinder, the bulk cylinder **MUST** be solidly secured to a post or wall bracket. If the cylinder were to be knocked over, the valve could be broken off, and the cylinder "Launched".

Your Deluxe Mini-Fill is equipped with a standard "CGA 320" fitting on the input side. This fitting will connect to any standard CO2 bulk tank in the United States. Please note that the threads are right-handed, and that a sealing washer (included) is required.



**THE BULK SUPPLY TANK YOU CONNECT TO MUST ALWAYS BE EQUIPPED WITH AN INTERNAL "DIP TUBE" BECAUSE IT IS NECESSARY TO DISPENSE THE LIQUID CO2 FROM THE BOTTOM OF THE BULK SUPPLY TANK.**

**YOU WILL NOT BE ABLE TO DISPENSE A COMPLETE FILL FROM A NON DIP TUBE TANK!**

On the backside of the fill station is a vent port. For safety reasons, this port must be directed away from the operator and bystanders. This port is equipped with 1/8 NPT threads so that if desired, a vent hose or muffler may be attached. **Do not use a bronze sintered muffler!!**

### SERVICE & MAINTENANCE

Routine maintenance consists of simply applying a drop of oil periodically on the threads of the vent knob, also on the ON-OFF knob threads. The "O" ring in the UFA will also benefit from occasional oiling.

If gas leakage is noted around the ON-OFF knob on the Deluxe Mini Fill Station, it indicates that the "O" ring on the valve shaft has worn or been damaged. To change this "O" ring, simply tap out the retaining roll pin with a 1/8" pin punch, and screw out the knob. You can then replace the "O" ring with the spare provided with your fill station. Be sure to replace the retaining roll pin.

10 MARCH 2004

## APPENDIX R PAINTBALL EQUIPMENT COMPONENT CHECKLIST

\_\_\_\_\_ Tippmann 98 marker, charging handle, bolt, remote adapter bolts and hose.

\_\_\_\_\_ M4 butt stock with locking ring.

\_\_\_\_\_ Rear sight

\_\_\_\_\_ Hopper

\_\_\_\_\_ M4 barrel with front sight post, locking rings, hand grips

\_\_\_\_\_ 20 oz air tank

\_\_\_\_\_ Remote cable

\_\_\_\_\_ Bottle Harness

\_\_\_\_\_ Extra ammo bottles

\_\_\_\_\_ Face mask