

PRECOMBAT CHECKS AND INSPECTIONS

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The following checklists have been developed for general and Volcano-specific precombat checks (PCCs) and precombat inspections (PCIs). They are based on firsthand experience in units and from observing leaders at the company level and below who struggle to conduct effective PCCs/PCIs at the Joint Readiness Training Center (JRTC). This is by no means a 100 percent solution for correcting difficulties in conducting PCCs/PCIs or emplacing minefields with the Volcano system, but they may help your unit during the critical preparation phase. They

have been forwarded to the Engineer School's Doctrine Development Division for inclusion in the next revision of FM 5-10, *Combat Engineer Platoon*.



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PCCs/PCIs Checklist

This general checklist serves as a reminder of questions for leaders to ask:

Bolt cutters

- ☐ How many are on hand?
- ☐ How many are required?
- ☐ Do maneuver platoons have any?

Pioneer tools

- ☐ Are the kits complete?
- ☐ Are they serviceable?

Demolitions bags

- ☐ Have they been inventoried? Ensure they are complete, to include tape.
- ☐ Are they serviceable?
- ☐ How many are on hand per squad?
- ☐ Do maneuver platoons have demolitions bags?

Mine detectors

- ☐ How many are on hand per squad?
- ☐ How many are required per squad?
- ☐ How many D cell batteries are on hand?
- ☐ Where is a resupply of batteries available?
- ☐ How many probes are on hand?
- ☐ Do the maneuver companies have any?
- ☐ Have preventive maintenance checks and services (PMCS) been performed?

Load plan

- ☐ Are the vehicles loaded?
- ☐ Are the ruck sacks loaded?
- ☐ Are the soldiers' loads (load-bearing equipment, uniform, and A-bag) consistent with the SOP?
- ☐ Who is carrying the TOE equipment, and where is it located?

Obstacle lane-marking system

- ☐ Are enough marking materials on hand to mark eight lanes per squad?
- ☐ Who is carrying the immediate resupply?
- ☐ Are any other units carrying marking materials?
- ☐ Where can we get more materials (heavy/light)?
- ☐ How many picket pounders are on hand?
- ☐ What is the obstacle-marking SOP for the brigade/division?

Demolitions

- ☐ What is the demolitions count by type?
- ☐ Are the charges prepared according to the mission?
- ☐ Who is resupplying engineers with demolitions—the engineer company/battalion or the maneuver task force?
- ☐ Where is the supply point?
- ☐ What is the transportation plan? Are the modernized demolitions initiators (MDI) and demolitions being transported together or separately?

- ☐ Do maneuver platoons have any demolitions available?
- ☐ What is the cross-load plan?

Volcano

- ☐ Have PMCS been performed according to TM 9-1095-208-23&P, *Unit and Direct Support Maintenance Manual for Dispenser, Mine, M139*?
- ☐ Have function checks been performed?
- ☐ Where are the mine canisters located?
- ☐ Where are the reload mine canisters located?
- ☐ What is the survivability plan?
- ☐ What is the control substitution plan if more than one Volcano is deadlined?
- ☐ How many operators are available?
- ☐ What is the protection plan for movement?
- ☐ Is a copy of the obstacle overlay available?
- ☐ What are the triggers for installation?
- ☐ What is the communications plan?

MICLIC

- ☐ Have PMCS been performed according to TM 9-1375-215-14&P, *Operator's, Unit, Direct Support and General Support Maintenance Manual for Demolition Kit, Mine-Clearing Line Charge (MICLIC)*?
- ☐ Have function checks been performed?
- ☐ Have circuit tests been performed?
- ☐ Where are the MICLIC tubs and rockets located?
- ☐ Where are the tie-down straps for the rocket located?
- ☐ Where are the reload tubs and rockets located?
- ☐ What is the survivability plan?
- ☐ Has a misfire kit been prepared?
- ☐ What is the control substitution plan if more than one MICLIC is deadlined?
- ☐ What is the communications plan?

Modular Pack Mine System (MOPMS) and Remote-Control Unit (RCU)

- ☐ Have PMCS been performed according to TM 9-1345-209-10, *Operator's Manual for Modular Pack Mine System (MOPMS)*?
- ☐ Have function checks been performed?
- ☐ Where are the MOPMS boxes located?
- ☐ How many BA 5598/Us are required?
- ☐ How many BA 5598/Us are on hand?

- ☐ Where can more BA 5598/Us be obtained?
- ☐ How many MOPMS boxes do the maneuver companies and the battalion have?
- ☐ How many RCUs do the maneuver companies and the battalion have?
- ☐ How many operators are in the infantry?
- ☐ Is a copy of the obstacle overlay on hand?
- ☐ What are the triggers for installation?
- ☐ What is the communications plan?
- ☐ Which is the overwatching unit?

Weapons zero

- ☐ Have individual weapons been zeroed?
- ☐ Have crew-served weapons been zeroed?
- ☐ Are tripods on hand?
- ☐ Are traverse and elevation (T & E) mechanisms on hand?
- ☐ Are spare barrels on hand?
- ☐ Are range cards on hand?

Rehearsals for offense/defense

- ☐ Are materials and personnel on hand to construct a rehearsal site?
- ☐ Have squad battle drills (engineer and infantry) been rehearsed?
- ☐ Have platoon battle drills (engineer and infantry) been rehearsed?
- ☐ Have maneuver battle drills been rehearsed?
- ☐ Have the actions on contact (seven forms) been rehearsed?
 - Visual contact
 - Physical contact (direct fire) with an enemy force
 - Indirect fire
 - Contact with enemy obstacles or those of unknown origin
 - Contact with enemy or unknown aircraft
 - Situations involving nuclear, biological, and chemical (NBC) conditions
 - Situations involving electronic warfare tactics
- ☐ Have actions at halts been rehearsed?
- ☐ Have actions on the objective been rehearsed?
- ☐ Have actions in the assembly area been rehearsed?
- ☐ Have actions at base camps been rehearsed?
- ☐ Have reconsolidation and reorganization been rehearsed?
- ☐ Have actions on contact while deploying the Volcano been rehearsed?

- ☐ Have rollover drills with vehicles been rehearsed?
- ☐ Have fire drills with vehicles been rehearsed?

Vehicles

- ☐ Have PMCS been performed according to the appropriate TM?
- ☐ Are Class III basic loads on hand?
- ☐ What is the Class III resupply plan?
- ☐ Are spare parts on hand for vehicles and special equipment (if applicable)?
- ☐ Are unit identification markings on the vehicles?
- ☐ What is the casualty marking plan?
- ☐ Does each vehicle have a map and graphics?
- ☐ Have communications checks (short- and long-range) been performed?

Communications

- ☐ Are the AN/CYZ-10s loaded?
- ☐ Has communications security (COMSEC) been loaded?
- ☐ Are radio transmitters (RTs) loaded and the time set?
- ☐ Is there a 3-day supply of MANPACK batteries on hand?
- ☐ Are there spare HUB batteries on hand?
- ☐ Are there spare AN/CYZ-10 batteries on hand?
- ☐ Have communications checks (long- and short-range) been performed?
- ☐ Are the OE-254 antennas on hand and serviceable?

Night vision goggles

- ☐ Is there one pair on hand for each driver, track commander, and squad leader?
- ☐ Are AN/PVS-4s on hand for all M203 and M249 weapons?
- ☐ Are AN/TVS-5s on hand for all M2 machine guns and MK 19 weapons?
- ☐ Are there spare batteries on hand?
- ☐ Are there spare AA batteries on hand?
- ☐ Have PMCS been performed?

AN/PSN-11

- ☐ Has COMSEC been loaded?
- ☐ Is the AN/PSN-11 set up and initialized for the geographical location?
- ☐ Are spare memory batteries on hand?
- ☐ Is there a 4-day supply of BA 5800s on hand?

- ☐ Are all authorized accessories on hand?
- ☐ Are the vehicle power and external antennas operational?

Class IV/V supplies

- ☐ What supplies are on hand?
- ☐ What supplies are on the battlefield?
- ☐ Are there enough in both places?
- ☐ Are more available?
- ☐ Who is in charge of them during offensive and defensive operations?
- ☐ What hauling assets are available?
- ☐ Where are Class IV/V supply points located?
- ☐ What is the unit SOP for setting up Class IV/V supply points?
- ☐ What equipment is on site?
- ☐ Are extra gloves on site for laborers?
- ☐ What is the accountability plan?
- ☐ Does the supply point have communications?
- ☐ Does the supply point have a copy of the obstacle plan or a breakdown of materials?

Traffic control point (TCP) materials

- ☐ Are wire and pickets on hand?
- ☐ Are mines on hand?
- ☐ Are sandbags on hand?
- ☐ Have guard shacks been constructed?
- ☐ What survivability materials are on hand?
- ☐ What is the United Nations TCP design?
- ☐ Where is the quick reaction force (QRF) located and what is its response time?

Mine-clearing blade (MCB)

- ☐ How many are serviceable and where are they located?
- ☐ Have PMCS been performed according to TM 9-2590-509-10, *Operator's Manual for Mine-Clearing Blade for M1, 1PM1, M1A1, or M1A2 Abrams Tank*?
- ☐ Are replacements and repair parts available?

Mine-clearing roller (MCR)

- ☐ How many are serviceable and where are they located?
- ☐ Have PMCS been performed according to TM 5-2590-214 *Operator's Manual for Roller Kit, Mine, and Mounting Kit, Mine-Clearing Roller*?
- ☐ Are replacements and repair parts available at the maintenance area?

M9 ACE

- ☐ Have PMCS been performed according to TM 5-2350-262-10?
- ☐ How many steel road wheels are on hand in the platoon?
- ☐ How many steel road wheels are in the battalion's prescribed load listing (PLL)?
- ☐ How many aluminum road wheels are on hand in the platoon?
- ☐ How many aluminum road wheels are on hand at the battalion PLL?
- ☐ What is the availability of petroleum, oil, and lubricants (POL) (15-40W, 10W, 90W)?
- ☐ Is the basic POL load located with the platoon sergeant or with the platoon leader?

Miscellaneous

- ☐ What support can we get from the maneuver company?
- ☐ What are the time lines of major meetings?

- ☐ What are the report times and formats?
- ☐ When are the critical face-to-face meetings with engineer command post (CP) personnel and the commander?
- ☐ When are the conference calls with the engineer commander via FM radio?
- ☐ When are the conference calls with the maneuver commander via FM radio?
- ☐ How often does the engineer CP want situation reports (SITREPs) from platoons?
- ☐ What is the time line for obstacle-marking-system upgrades?
- ☐ What is the maneuver time line for major events and meetings?
- ☐ What is the mission preparation time line?
- ☐ When is the intelligence update?
- ☐ Is a copy of the unit SOP available?
- ☐ Is a copy of the operations order (OPORD) and graphics available?

Volcano Checklist

PCCs/PCIs before deployment. Ensure that the following are on hand:

- ☐ All parts of the Volcano system
- ☐ Vehicle-mounted AN/PSN-11s (pluggers)
- ☐ A full load of M89 training canisters
- ☐ Electrical contact cleaner spray
- ☐ Canvas and bows
- ☐ TM 9-1095-208-10-1, *Operator's Manual for Dispenser, Mine, M139 w/Mounting Kits*
- ☐ TM 9-1095-208-23-2&P and parts manual
- ☐ FM 20-32, *Mine/Countermining Operations*
- ☐ FM 90-7, *Combined-Arms Obstacle Integration*

Planning considerations for deployment

- ☐ Ensure that for each 2-vehicle Volcano team, the following are on hand:
 - 2 Volcano system vehicles
 - 4 Volcano operators
 - 1 NCOIC

- ☐ Rehearse reload battle drill.
- ☐ Ensure that the following spare parts are on hand:
 - 1 Hand control unit (HCU) *
 - 1 Dispenser control unit (DCU) *
 - 2 Launcher rack cables
 - 1 Power cable
 - 2 Launcher racks *
 - 4 ID Connector shunt plugs (one for color/shape)

* Indicates control substituted parts from another nonmission-capable system.

Miscellaneous planning considerations

- ☐ Determine how many Volcano systems are on hand.
- ☐ Determine how many canisters are on hand.
- ☐ Determine if ground or air Volcanos are being used.
- ☐ Identify the effect of the Volcano minefield (disrupt, fix, turn, block).
- ☐ Use air Volcanos forward of the forward edge of the battle area (FEBA).

- ☐ Use Volcanos to develop the engagement area (EA).
- ☐ Determine the location of Volcanos on the ground.
- ☐ Identify the hide position locations.
- ☐ Identify the route to the minefield.
- ☐ Know when rehearsals are planned (day and night).
- ☐ Identify the decision points for situational and reserve obstacles.
- ☐ Identify the named areas of interest (NAIs).
- ☐ Identify the triggers and alternate triggers.
- ☐ Know the deception plan.
- ☐ Know which vehicle will be used for rehearsals.
- ☐ Plan for a backup vehicle, in case the primary vehicle breaks down.
- ☐ Prepare a reload plan, if needed (the suggested manpower is 12 personnel—eight on the ground and four on the truck).
- ☐ Know the survivability plan.
- ☐ Know the security along the route.
- ☐ Know the observer plan.
- ☐ Site the EA with the overwatching unit.

Survivability

- ☐ Dig survivability positions for each Volcano system.
- ☐ Park the air Volcanos with the attack helicopters.
- ☐ Move the Volcanos to new hide positions after each contact.
- ☐ Camouflage Volcanos in hide positions.
- ☐ Move the Volcanos at night (whenever possible).
- ☐ Have escort vehicles and dismounts in the front and rear.
- ☐ Clear, proof, and confirm route before moving the Volcanos.

PCCs/PCIs

- ☐ Establish communications with the platoon and company.
- ☐ Ensure that the AN/PSN-11s operate properly and have crypto.
- ☐ Run the built-in test before loading the canisters.
- ☐ Run the built-in test after loading the canisters.
- ☐ Ensure that operator vehicle maintenance (OVM) and basic issue items (BII) are on hand for the Volcano and carrier.
- ☐ Ensure that the obstacle plan is on hand.
- ☐ Ensure that the OPORD brief is on hand.

Rehearsals

- ☐ Perform day and night rehearsals.
- ☐ Use a HMMWV or a vehicle of equal size.
- ☐ Mark the centerline for day and night execution (at a minimum, the start and end points may need intermediate markers).
- ☐ Mark the evacuation routes for day and night.
- ☐ Perform rehearsals with the primary and backup operators.
- ☐ Rehearse a malfunction plan.
- ☐ Check the scatterable mine warning (SCATMIN-WARN) and report the communications net.

Maintenance

- ☐ Ensure that dirt and moisture are kept out of the racks.
- ☐ Check the operation of the Volcano system daily.
- ☐ Use TM 9-1095-208-10-1 for operator-level maintenance.
- ☐ Protect all cables from being stepped on.
- ☐ Keep a stock of cables in PLL.
- ☐ Perform a function test on the HCU and DCU.
- ☐ Check and clean the rack mounting ball detent pins daily. (Keep spares on the vehicle.)