



US Army Corps
of Engineers®
Engineer Research and
Development Center

ERDC/CERL TR-10-10

Construction Engineering
Research Laboratory

Military Training Lands Historic Context

Training Village, Mock Sites, and Large Scale Operations Areas

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Loading platforms

Side-type P-1

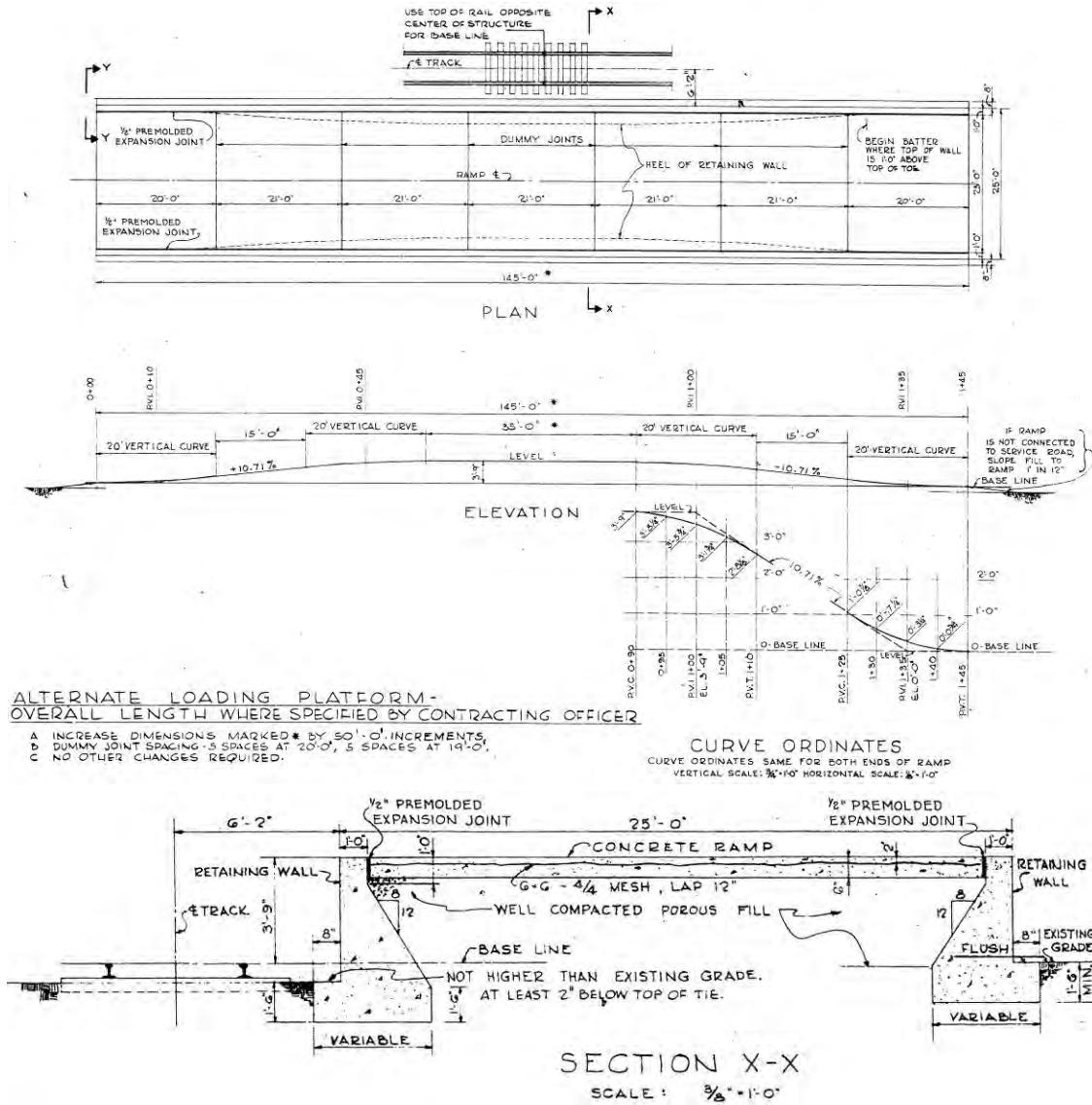


Figure 166. Rail movement mock-up, loading platform-side-type P-1, Fort Bragg, NC, 1952 (standard drawing 28-13-100 sheet 2 of 4; rail movement mock-up, loading platform-side-type p-1; 11 April 1952).

End-type P-2

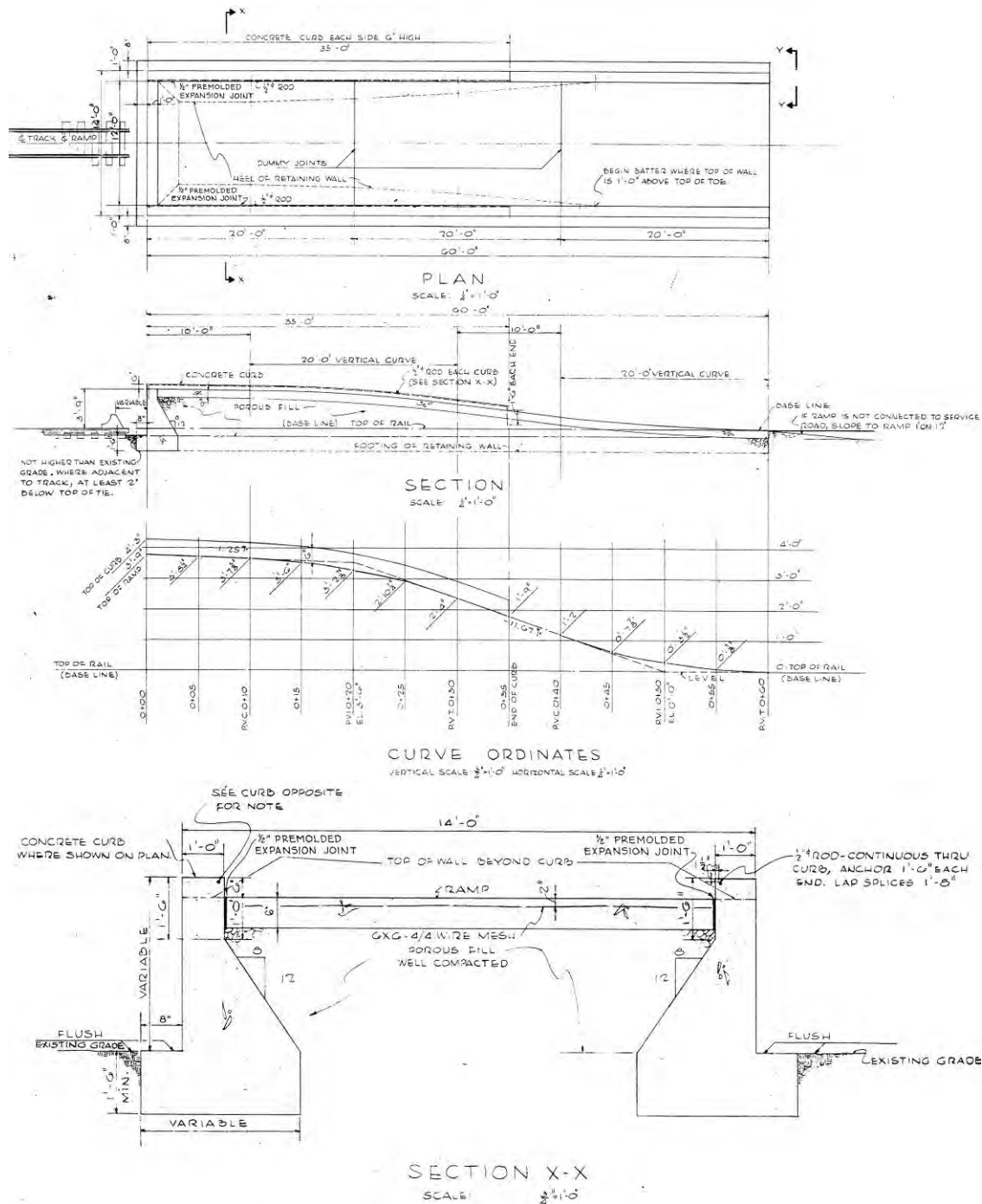
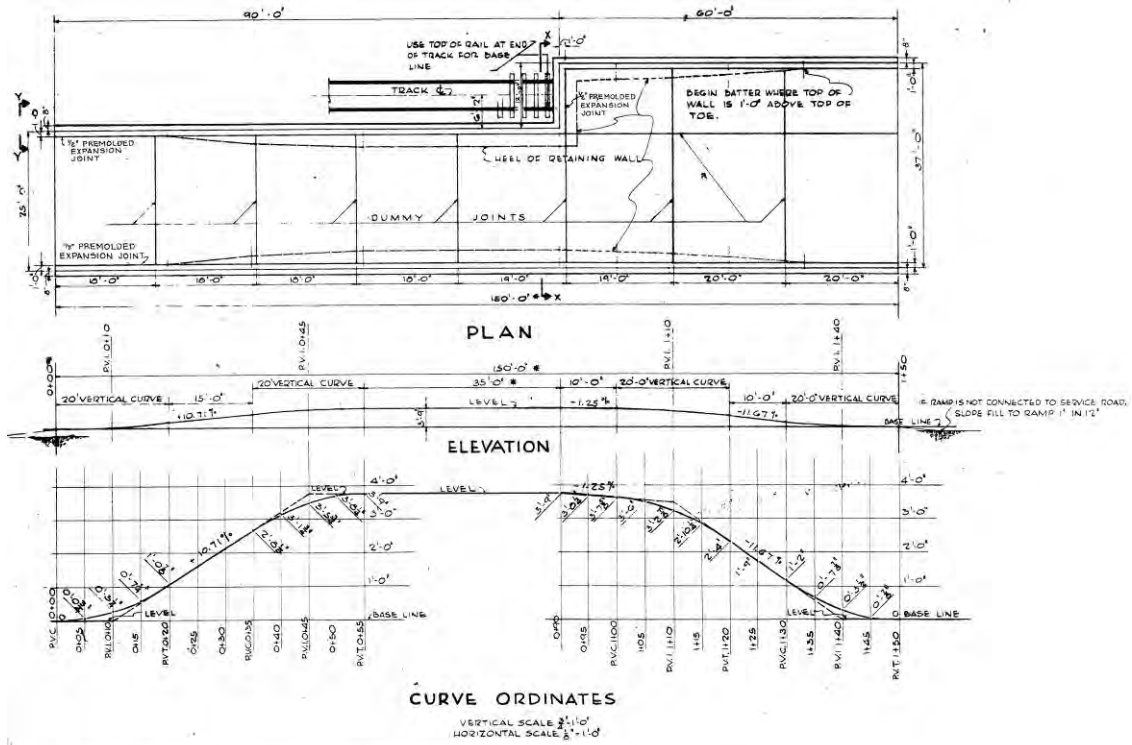


Figure 167. Rail movement mock-up, loading platform-end-type P-2, Fort Bragg, NC, 1952 (standard drawing 28-13-100 sheet 3 of 4; rail movement mock-up, loading platform-end-type P-2; 11 April 1952).

End and side-type-P-3



ALTERNATE LOADING PLATFORM -
 OVERALL LENGTH WHERE SPECIFIED BY CONTRACTING OFFICER

A INCREASE DIMENSIONS MARKED * BY 50'-0" INCREMENTS.
 B DUMMY JOINT SPACING & SPACES AT 20'-0", 1 AT 21'-0", 1 AT 19'-0", 2 AT 20'-0"
 C NO OTHER CHANGES REQUIRED.

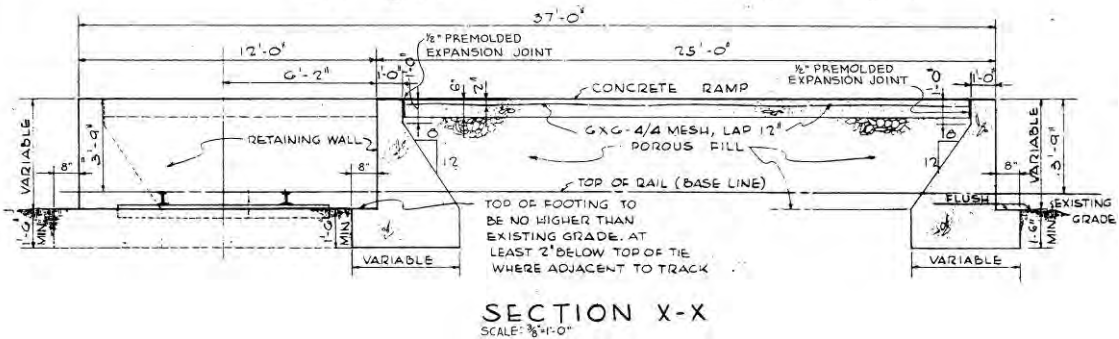
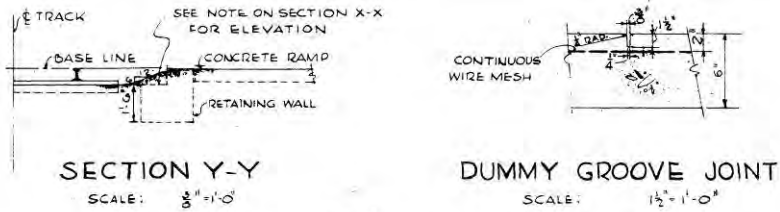


Figure 168. Rail movement mock-up, loading platform, end and side type P-3, Fort Bragg, NC, 1952 (standard drawing 28-13-100 sheet 4 of 4; rail movement mock-up, loading platform, end and side type P3; 11 April 1952).

Trench training

“Investigations performed at numerous closed and active installations indicate that, during WWI, training requirements were developed to insure personnel knew how to conduct combat operations in the trench warfare environment of Europe. The military continued to train troops in trench warfare until the late 1930’s, when it appeared that the next war would not include trench warfare. Training in trench warfare involved learning how to prepare, defend, and attack trench type fortifications. Often, trench systems were constructed with two complete trench systems facing each other. Training on a trench system might have involved conducting attacks on a trench using rifles, machine guns, hand and rifle grenades, and trench mortars. Additionally, smoke and chemical weapons training may have been included in this type of training. Firing trenches were extensively used in hand grenade training. No targets were associated with the Trench System” (“RO-2” 14).

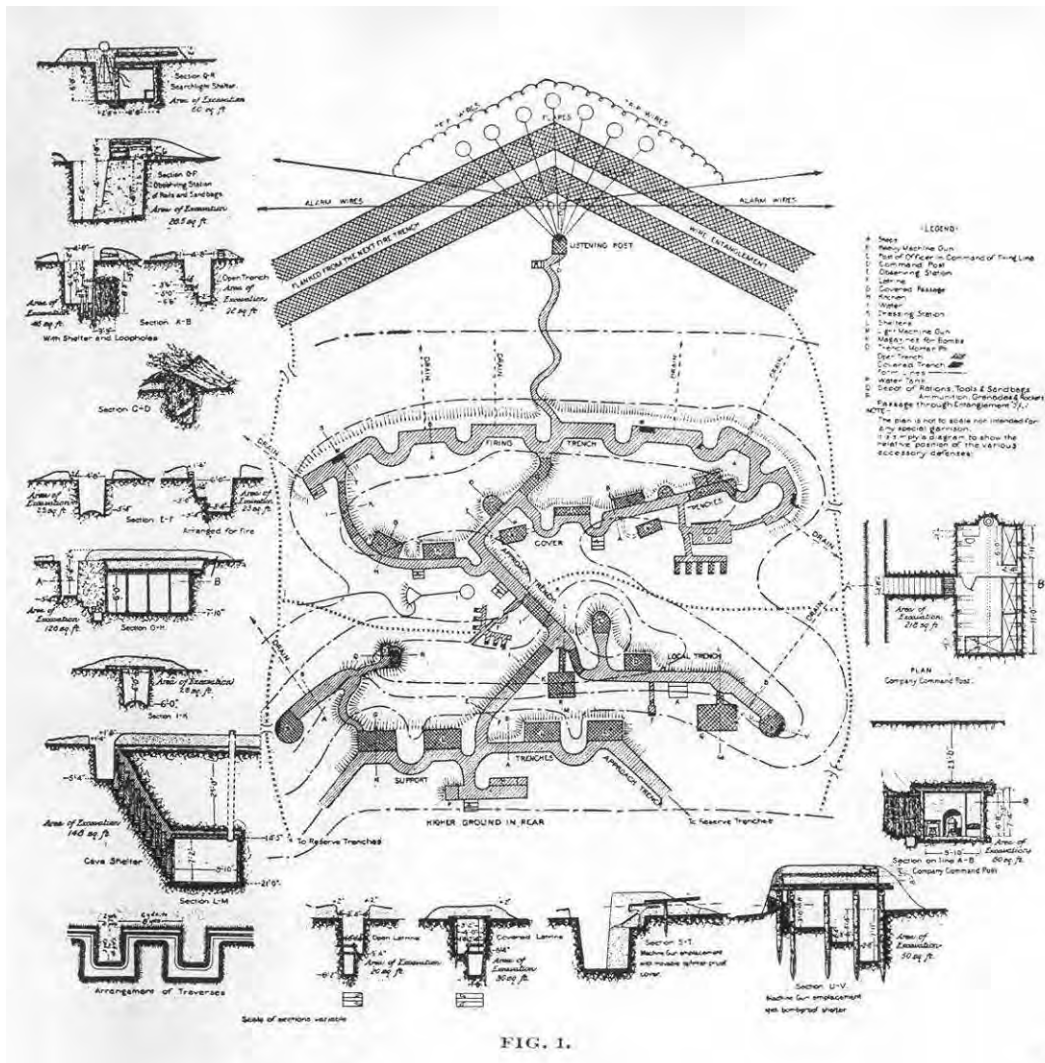


Figure 169. Typical trench system, circa 1917 (War Department document No. 355, Engineer Field Manual, Fifth Revision, 31 December 1917, p 300).



Figure 170. Trench training at Camp McClellan, AL, circa 1917 (New York Public Library, Digital Number 437646).



Figure 171. Trench firing line at Camp Wheeler, GA, 1918 (New York Public Library, digital number 117146).



Figure 172. Jumping into trenches at Camp Wheeler, GA, 1918 (New York Public Library, digital number 117149).



Figure 173. Trench training at unknown location, circa 1918 (New York Public Library, digital number 437675).

Courses

Attack Course

“The attack course was primarily designed for combined arms units to train on conducting attacks, retreats, and other similar tactical exercises. Although designed to support combined arms, this course was primarily used by a single combat arms unit. Additionally, this course was somewhat unique because it was supported by assets not organic to the unit conducting the training such as aerial bombing and strafing. Based upon training objectives and available terrain, the unit or range control would lay out targets and other training aids (such as mine fields or wire entanglements)” (“RO-2”). “Targets placed on the course included fixed personnel targets, simulated anti-tank gun targets, and towed armored vehicle targets. Remote-controlled simulators were used to simulate anti-tank gunfire. Enemy riflemen, gun crews, bazooka teams, and other personnel were represented by silhouette targets. Machine guns, tanks, antitank guns, and emplacements were represented by wooden models. Wooden frames covered with olive drab or other dark paper were placed behind targets for scoring. In problems involving only small arms ammunition, surprise targets were operated from pits or other shelters on the flanks of the course. The silhouette targets were constructed of one-eighth inch thick pasteboard with a wooden stave attached to the back. The targets were painted an olive drab color” (“RO-2” 29). “A formal layout of an attack course is shown in Figure 174 below (best available drawing). However, these courses may have been laid out differently based on a unit’s special mission” (“RO-2”).

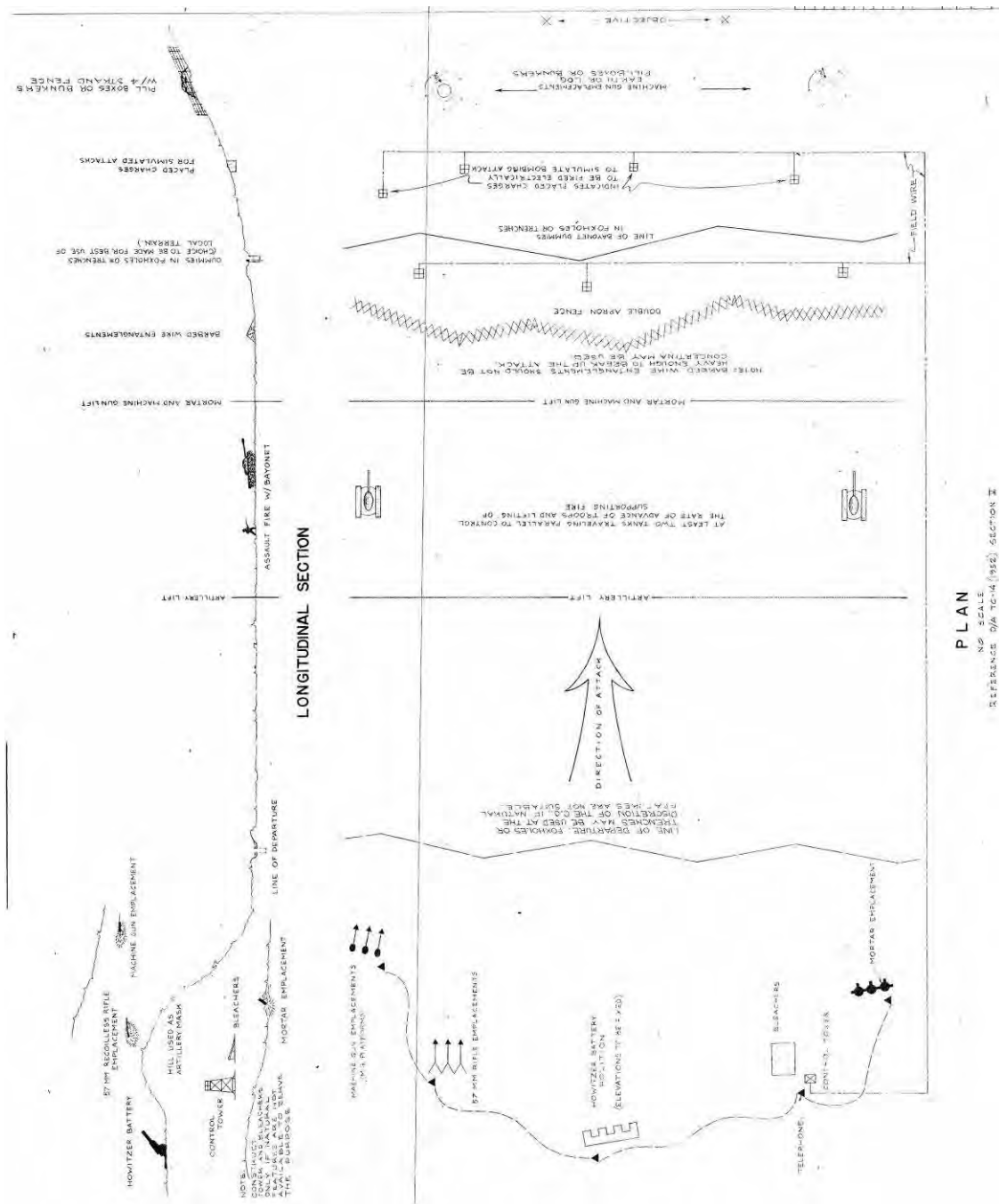


Figure 174. Attack course, circa 1952 (TM 9-855, standard drawing No 28-13-99, sheet 1 of 2, attack course, 27 May 1952).

Targets

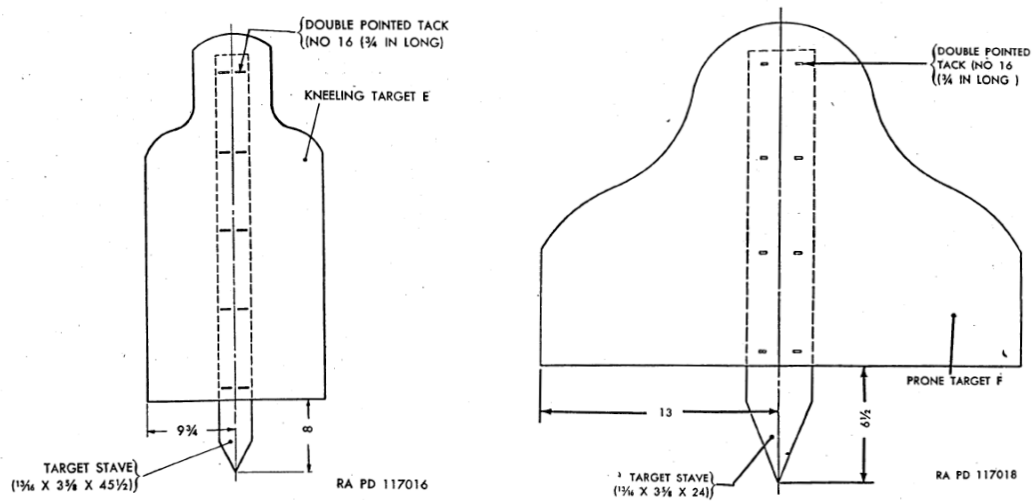


Figure 175. Kneeling and prone silhouette targets, circa 1951 (TM 9-855, targets, target materials, and rifle range construction, 1 November 1951, pp 168, 172, 174, 176).

Pill box

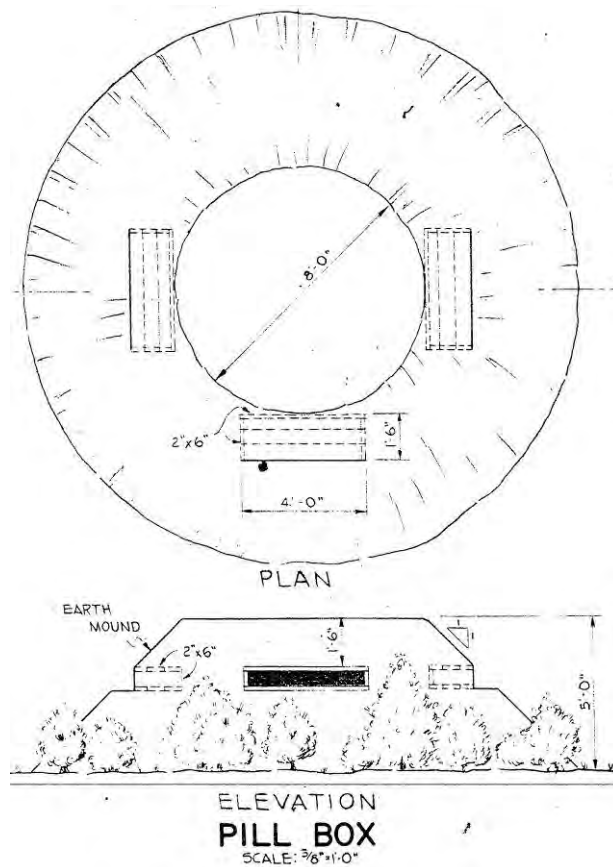
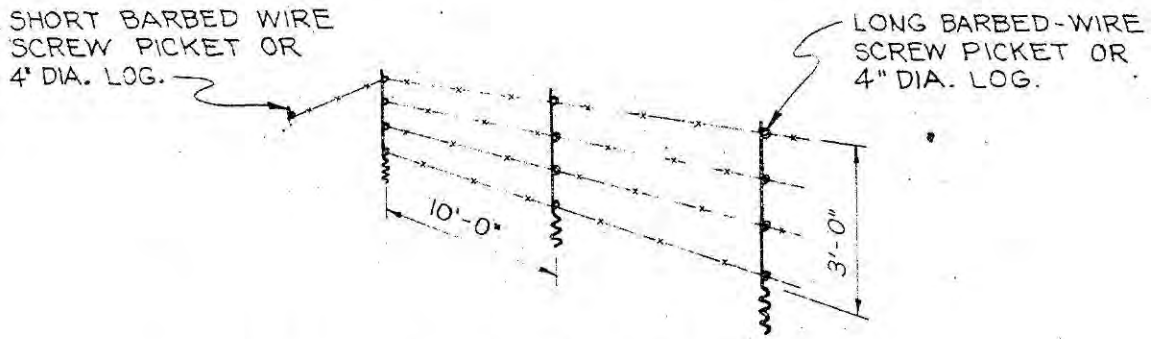


Figure 176. Attack course, pill box, Fort Bragg, NC, 1952 (standard drawing 28-13-99 sheet 2 of 2; attack course, details; 20 June 1952).

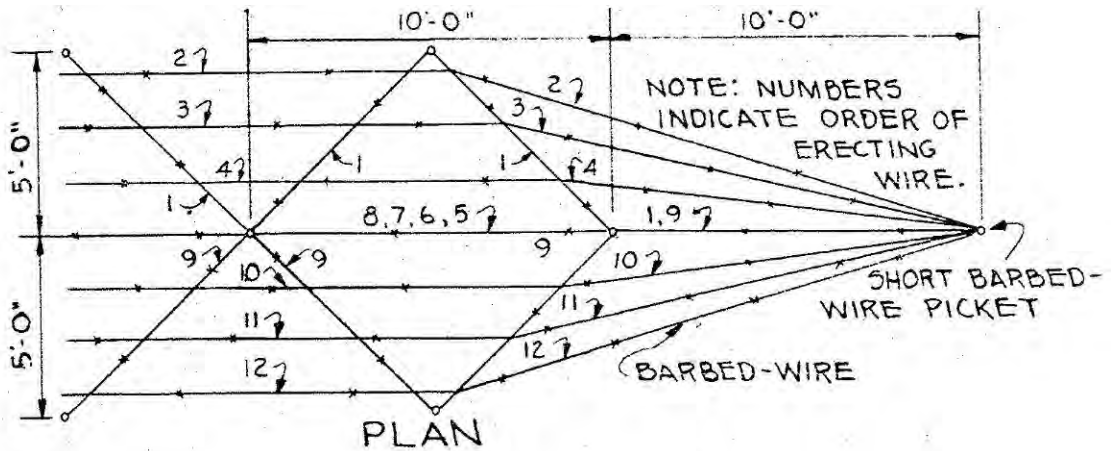
Fences



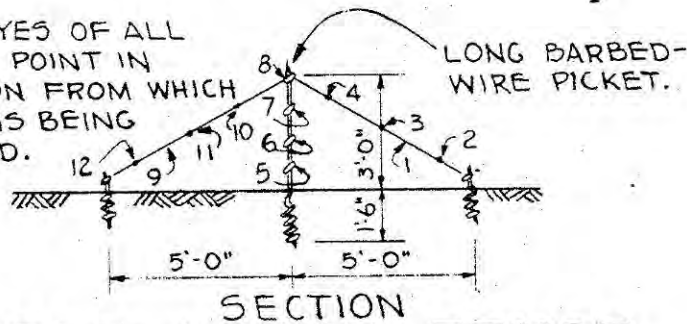
BARBED WIRE FENCE

NO SCALE

Figure 179. Attack course, barbed wire fence, Fort Bragg, NC, 1952 (standard drawing 28-13-99 sheet 2 of 2; attack course, details; 20 June 1952).



NOTE: EYES OF ALL PICKETS POINT IN DIRECTION FROM WHICH FENCE IS BEING ERECTED.



DOUBLE-APRON FENCE

SCALE: 1/4" = 1'-0"

Figure 180. Attack course, double-apron fence, Fort Bragg, NC, 1952 (standard drawing 28-13-99 sheet 2 of 2; attack course, details; 20 June 1952).

Control tower

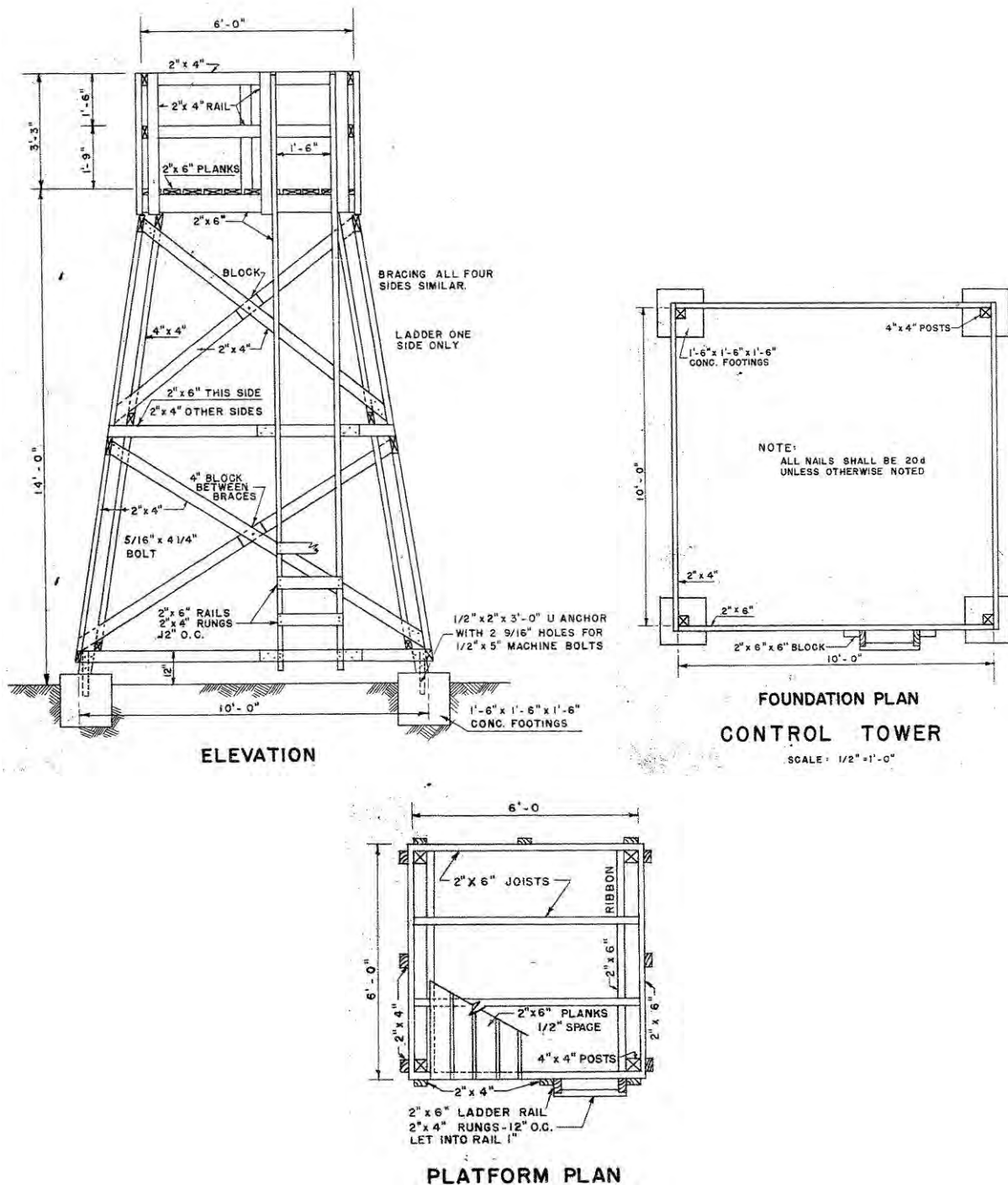


Figure 181. Attack course control tower (note that all exposed woodwork except creosoted poles were to be painted), Fort Bragg, NC, 1955 (standard drawing 28-13-105a sheet 1 of 1; attack course; 6 June 1955).

Machine gun platform

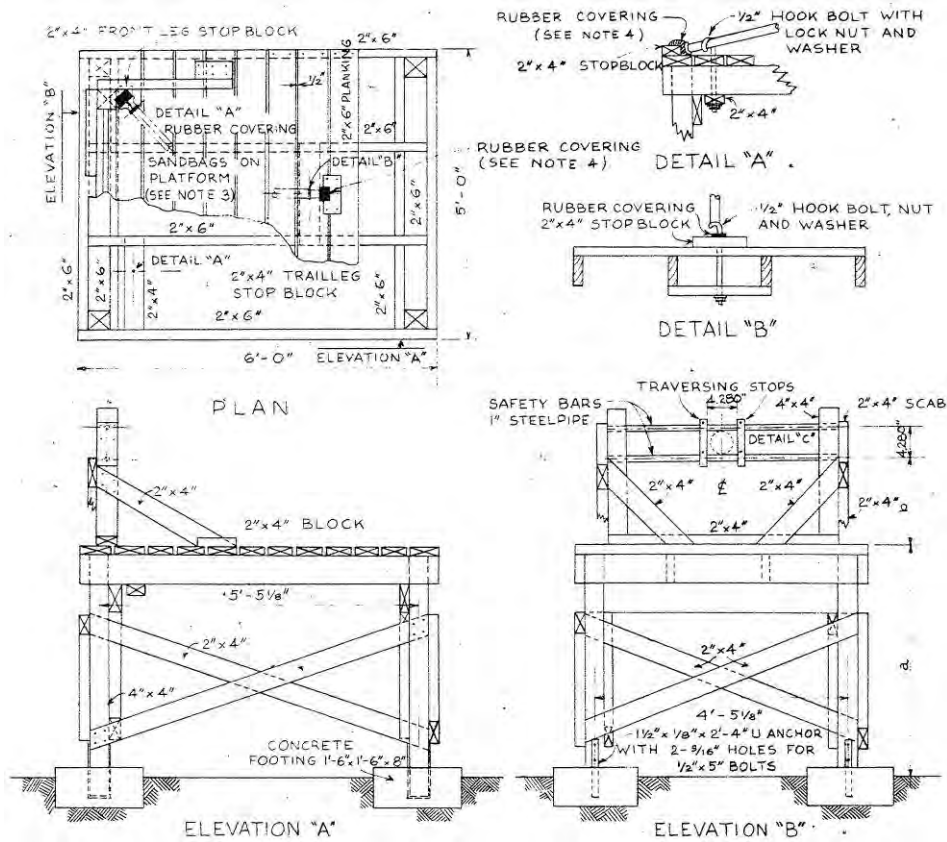


Figure 182. Attack course, machine gun platform, Fort Bragg, NC, 1952 (standard drawing 28-13-99 sheet 2 of 2; attack course, details; 20 June 1952).

Bleachers

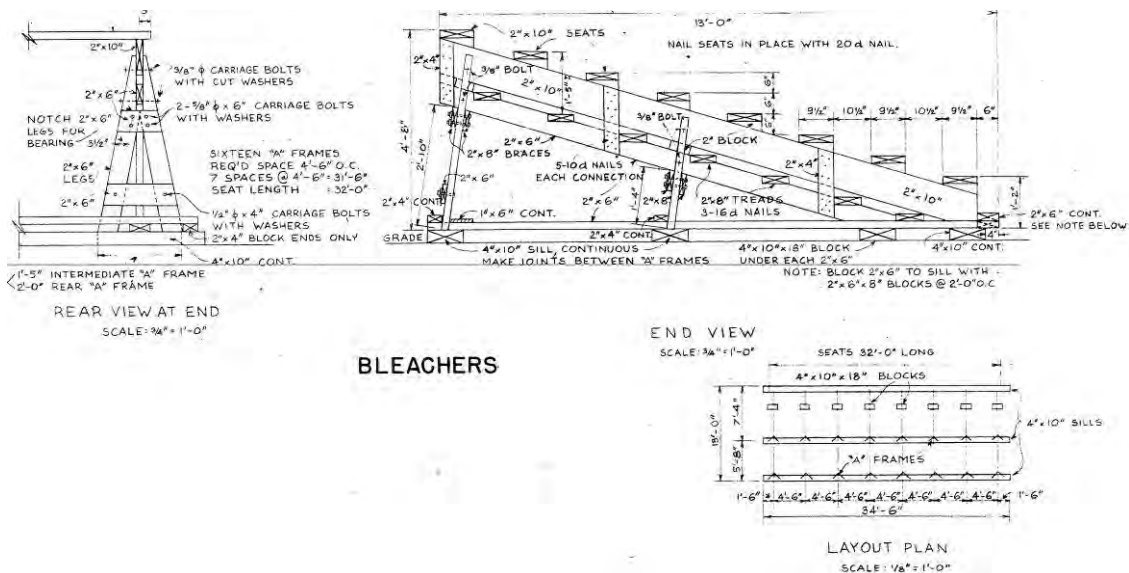


Figure 183. Attack course, bleachers, Fort Bragg, NC, 1952 (standard drawing 28-13-99 sheet 2 of 2; attack course, details; 20 June 1952).

Close combat course

The purpose of this course was to teach men to fire small arms with speed and accuracy at surprise targets while negotiating broken terrain. Lanes were marked by colored posts or by wire with rag streamers. Blanks and simulators were used. At least one situation requiring the use of a practice grenade was incorporated into the course. Booby traps were also employed ("RO-2" 20, 28). If facilities were available, targets were constructed and painted to be as realistic as possible (aggressor soldiers in standing, kneeling, and sitting positions). One or two moving targets were to be included to add interest to the exercise. Targets were arranged on hinges and pulleys, and activated by the control officer or men in pits on the signal of the control officer ("RO-2" 20, 28).

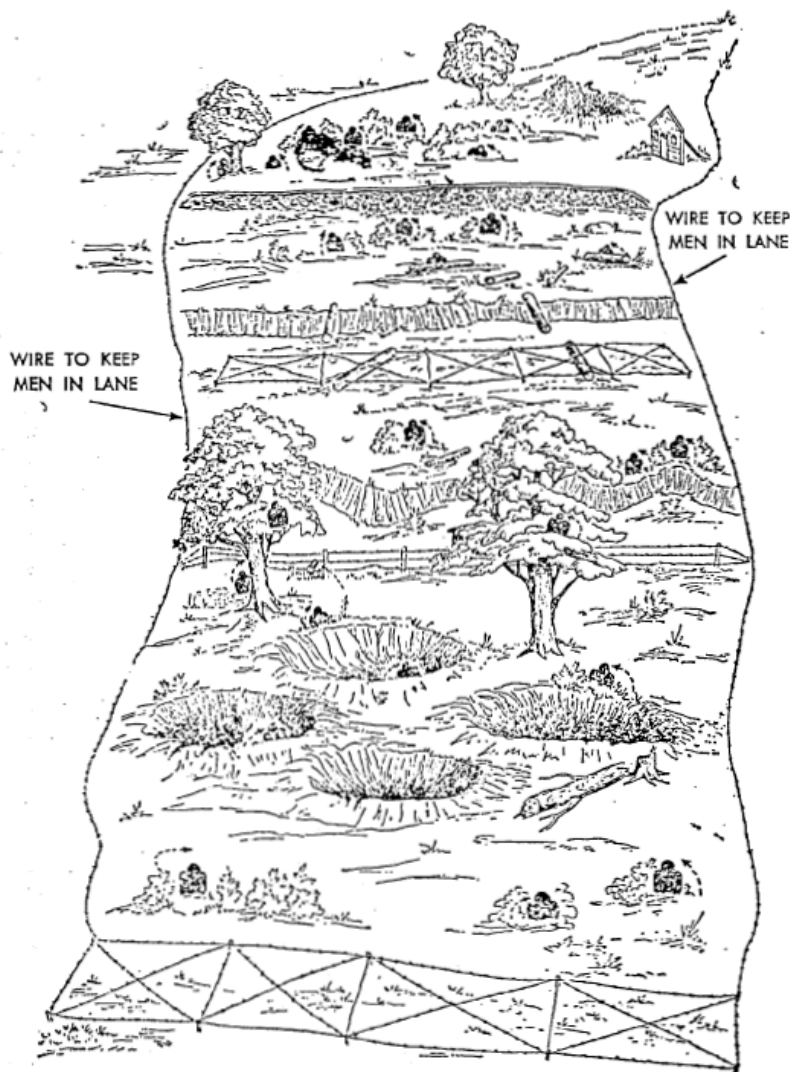
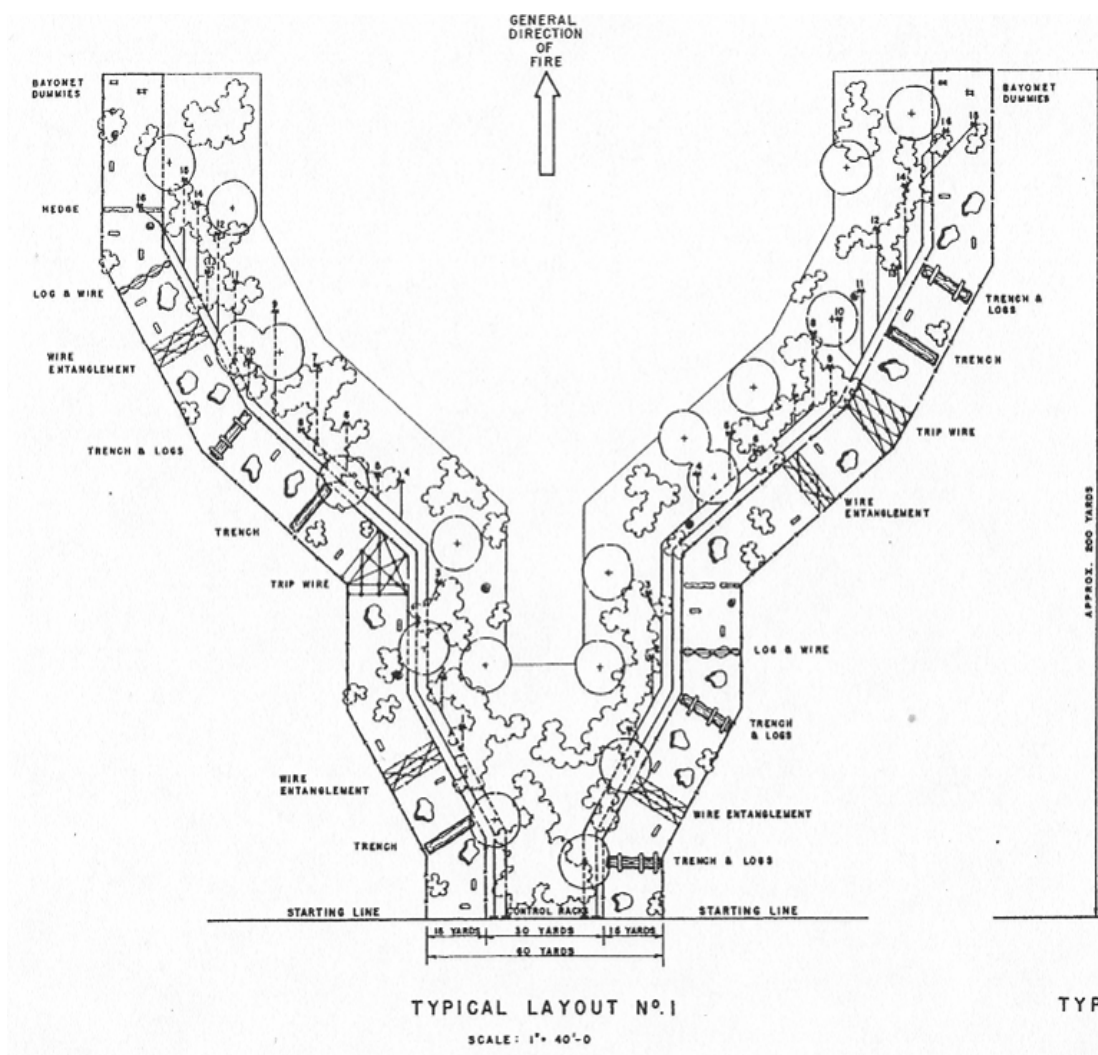


Figure 184. Close combat course, pictorial view, circa 1951 (TM 9-855, targets, target materials, and rifle range construction, 1 November 1951, p. 108).



OPERATION NOTES:

1. THE PURPOSE OF THIS COURSE IS TO TEACH MEN TO FIRE SMALL ARMS WITH SPEED AND ACCURACY AT SURPRISE TARGETS WHILE NEGOTIATING BROKEN TERRAIN.
2. TARGETS SHOULD BE ARRANGED ON HINGES AND PULLEYS AND ACTIVATED BY THE CONTROL OFFICER OR BY OTHER PERSONNEL ON A SIGNAL BY THE CONTROL OFFICER.
3. WHERE CONSTRUCTION NOTE No 4 IS NOT APPLICABLE, ADVANCE OF PERSONNEL SHOULD BE COORDINATED SO THAT FORWARD MOVEMENT IN EACH LANE OF THE COURSE WILL BE SIMULTANEOUS.
4. TARGETS SHOULD BE VISIBLE FOR A MINIMUM TIME CONSISTENT WITH THE RANGE. IN ADDITION, THEY SHOULD DISAPPEAR IMMEDIATELY AFTER THE SHOT IS FIRED.
5. SUFFICIENT TARGETS SHOULD BE PROVIDED SO THAT THE CONTROL OFFICER WILL HAVE AN ADEQUATE SELECTION IN EACH SITUATION THIS OFFICER, BY CONTROLLING THE NUMBER OF TARGETS PRESENTED IN EACH RUN, SHOULD INSURE THAT THE FIRER HAS ONE REMAINING ROUND TO FIRE AT ONE BAYONET DUMMY AND THAT HE THEN ASSAULTS THE OTHER DUMMY WITH THE BAYONET.
6. LANES SHOWN IN LAYOUT NO. 1 MAY BE USED AT THE SAME TIME PROVIDING NECESSARY SAFETY PRECAUTIONS ARE OBSERVED.

CONSTRUCTION NOTES:

1. SURPRISE TARGETS SHOULD APPEAR AT VARIOUS RANGES FROM 5 TO 50 YARDS.
2. IF PRACTICABLE, EXPLOSIVES OR BLANKS SHOULD BE FIRED IN THE CLOSE VICINITY OF THE FIRERS. SOOBY TRAPS SHOULD BE EMPLOYED. IN THE ABSENCE OF EXPLOSIVES, OTHER DISTRACTING NOISES SHOULD BE MADE.
3. LOCATION OF INDIVIDUAL TARGETS SHOULD TAKE ADVANTAGE OF LOCAL COVER FOR PURPOSE OF CONCEALMENT. SKETCHES "A," "B" AND "C" SHOW POSSIBLE LOCATION AND CONSTRUCTION FOR TARGETS. TARGETS SHOULD BE CONTROLLED BY WIRES FROM A POINT IN REAR OF STARTING LINE. (SEE "D" AND "E" AND DRAWING 1600-160 FOR TYPICAL CONSTRUCTION.)
4. WHERE MULTIPLE LANE COURSES, TYPICAL LAYOUT NO. 1, ARE USED, LOCATE OR SCREEN TARGETS IN ADJACENT LANES TO MINIMIZE PROBABILITY OF FIRE ON THEM FROM ADJACENT LANES.

Figure 185. Close combat course, circa 1943 (standard drawing no 1600-195, close combat course – typical, 10 August 1943).

TYPICAL LOCATION AND CONCEALMENT FOR INDIVIDUAL TARGETS



SKETCH A

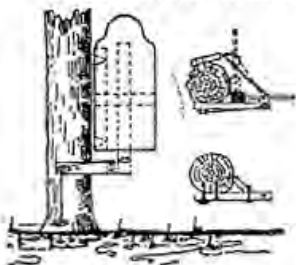


SKETCH B

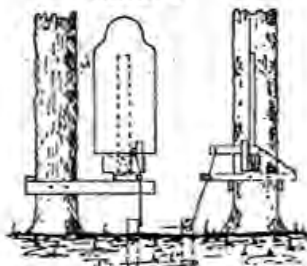


SKETCH C

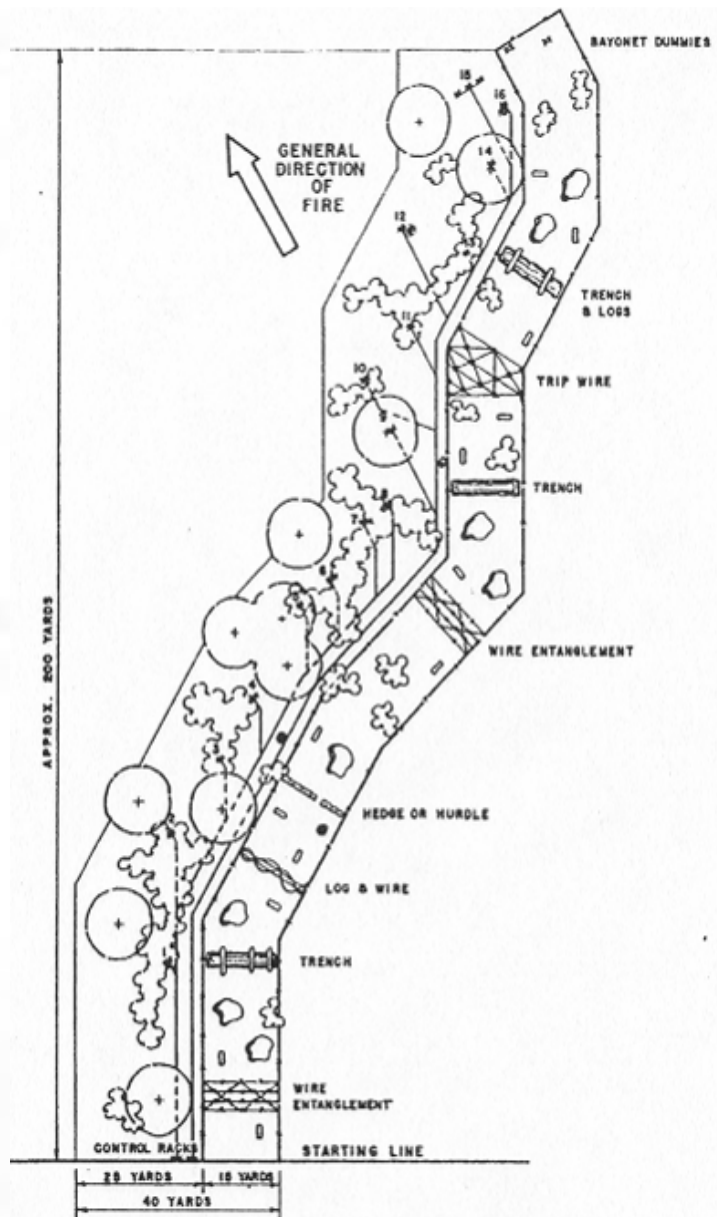
TYPICAL CONSTRUCTION DETAILS FOR ACTIVATING TARGETS



SKETCH D



SKETCH E



TYPICAL LAYOUT NO. 2

SCALE: 1" = 40'-0"

Figure 186. Close combat course, circa 1943 (standard drawing no 1600-195, close combat course – typical, 10 August 1943).

Surprise targets

Figure 187. As the trainee goes through the course, targets are suddenly raised at appropriate moments, and he must snap fire at them at Camp Fannin, TX, 1 April 1944 (NARA College Park, RG 111-SC WWII, box 681, photo SC324450).



Figure 188. Another view of the enemy combatant course at Camp Fannin, TX, 1 April 1944 (NARA College Park, RG 111-SC WWII, box 681, photo SC324449).

Individual tactical training areas

Individual Tactical Training (ITT) courses or areas were constructed to teach “individual battlefield skills, combat movement techniques, and procedures necessary for subsequent tactical training at the squad and platoon level” (“Individual Tactical Training”). An example from Heard Park, Fort Knox is shown below.

Infiltration course

A 1943 letter from Headquarters, Army Ground Forces directed units, replacement training centers, and unit training centers to construct infiltration courses. The course was to be generally level and contain both obstacles and dummy targets. Obstacles included shell holes, trenches, slit trenches, wire entanglements, logs, stumps, and sparse brush. Machine guns were placed in position, test fired, and fitted with depression stops so that their fire was grazing and insured a three-foot clearance over crawling troops. This document further stated that reduced charges of explosives representing artillery fire, mines, and booby traps could be placed throughout the course. Embankments were constructed into which machine guns fired. These embankments were 30 feet thick at the base, 5 feet thick at the top, 15 feet high, and long enough to provide safety to the flanks of the infiltration course (“RO-2” 19). The course may have had range lights, machine gun platforms, control towers, bleachers, latrines, and other range buildings.



Figure 189. Heard Park (individual tactical training) fire and movement at Fort Knox, KY, 5 May 1966 (NARA College Park, RG 111-SC post 1955, box 400, photo SC628844).



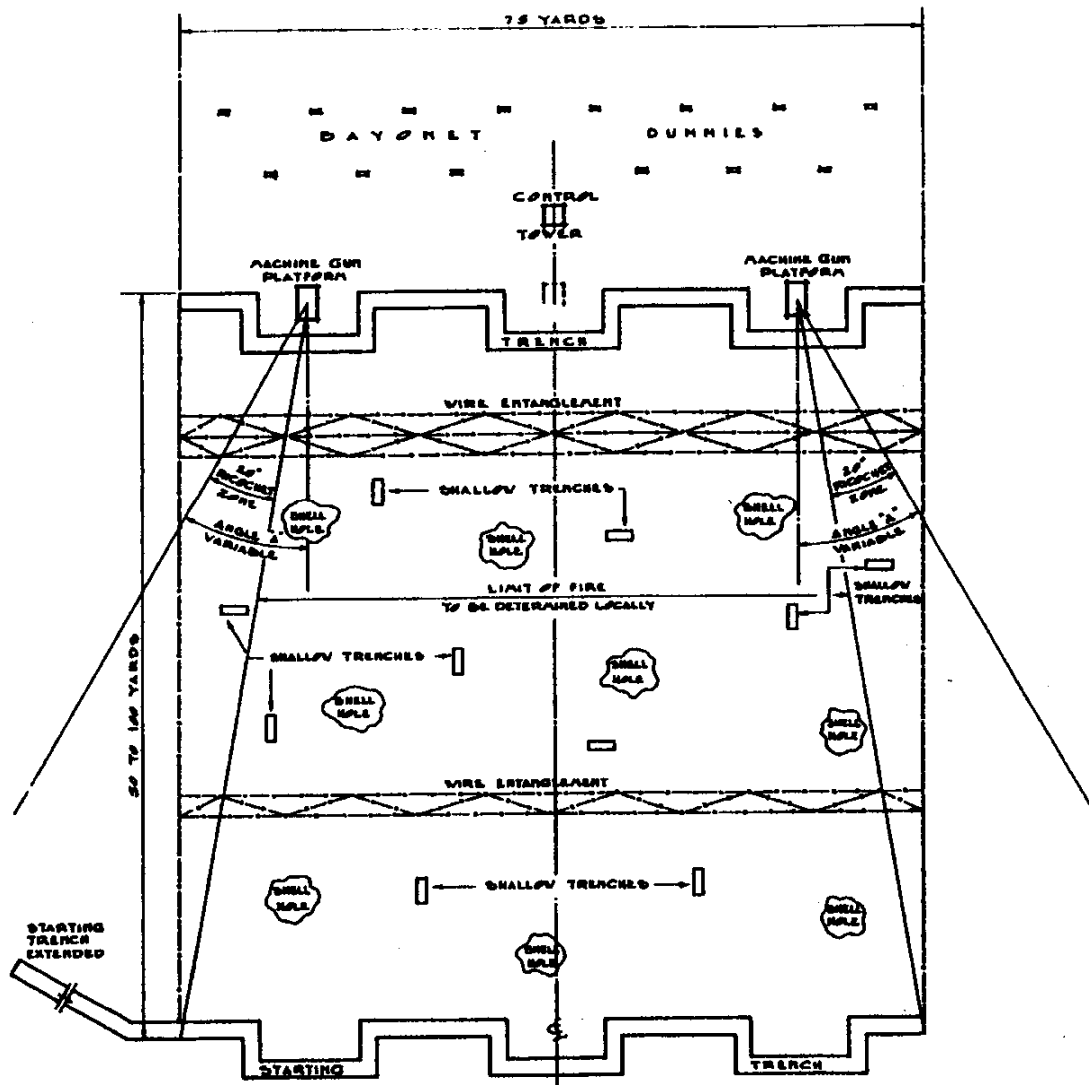
Figure 190. Crawling through the infiltration course at Fort Bragg, NC, 9 August 1950 (NARA College Park, RG 111-SC WWII, box 189, photo SC348205).



Figure 191. Poorman range (infiltration course) located on Range and Poorman Roads at Fort Knox, KY, 5 May 1966 (NARA College Park, RG 111-SC post 1955, box 400, photo SC628843).



Figure 192. Poorman Range (infiltration course) located on Range and Poorman Roads at Fort Knox, KY, 5 May 1966 (NARA College Park, RG 111-SC post 1955, box 400, photo SC628846).



· TYPICAL LAYOUT PLAN ·

SCALE: 1" = 20'



- NOTES:**
1. EXTEND STARTING TRENCH TO THE PLANK BEYOND RECEPTOR ZONE TO PERMIT MEN TO ENTER THE TRENCH WHILE FIRING IS IN PROGRESS.
 2. PLACE SIMULATED MINES (EXPLOSIVE CHARGES) AT VARIOUS LOCATIONS THROUGHOUT AREA. PLACE CHEVAL-DE-FRISE, GABRIELNET, OR CONCRETINE OVER AREA TO INSURE PROPER SAFETY TO PERSONNEL.
 3. AVOID STRAPS OR CHAINS EXTENDING INTO PLANE OF FIRE.
 4. WIRE ENTANGLEMENTS SHOULD BE LAID ENOUGH TO ENABLE RAISING OF WIRE TO PERMIT PERSONNEL TO WORK THEIR WAY UNDER IN DRONE POSITION.
 5. HEIGHT OF MACHINE GUN PLATFORM WILL BE DETERMINED BY LOCAL TERRAIN.

□ POSITION FOR THIRD MACHINE GUN IF DESIRED.

Figure 193. Infiltration course, circa 1943 (standard drawing No. 1600-190, infiltration course – typical, 1 July 1943).

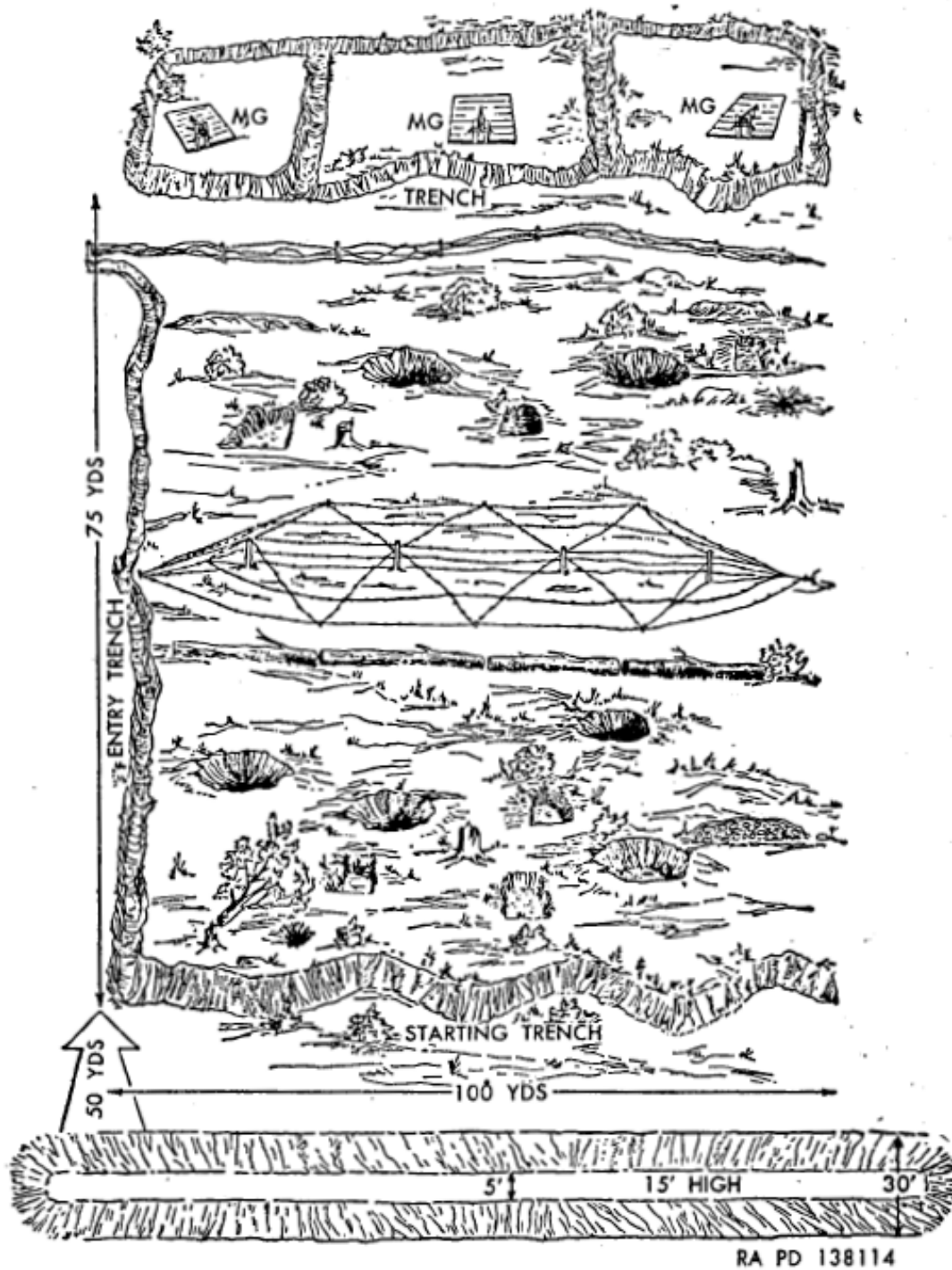


Figure 194. Pictorial view, infiltration course, circa 1951 (tm 9-855, targets, target materials, and rifle range construction, 1 November 1951, pp. 9, 113, 129).

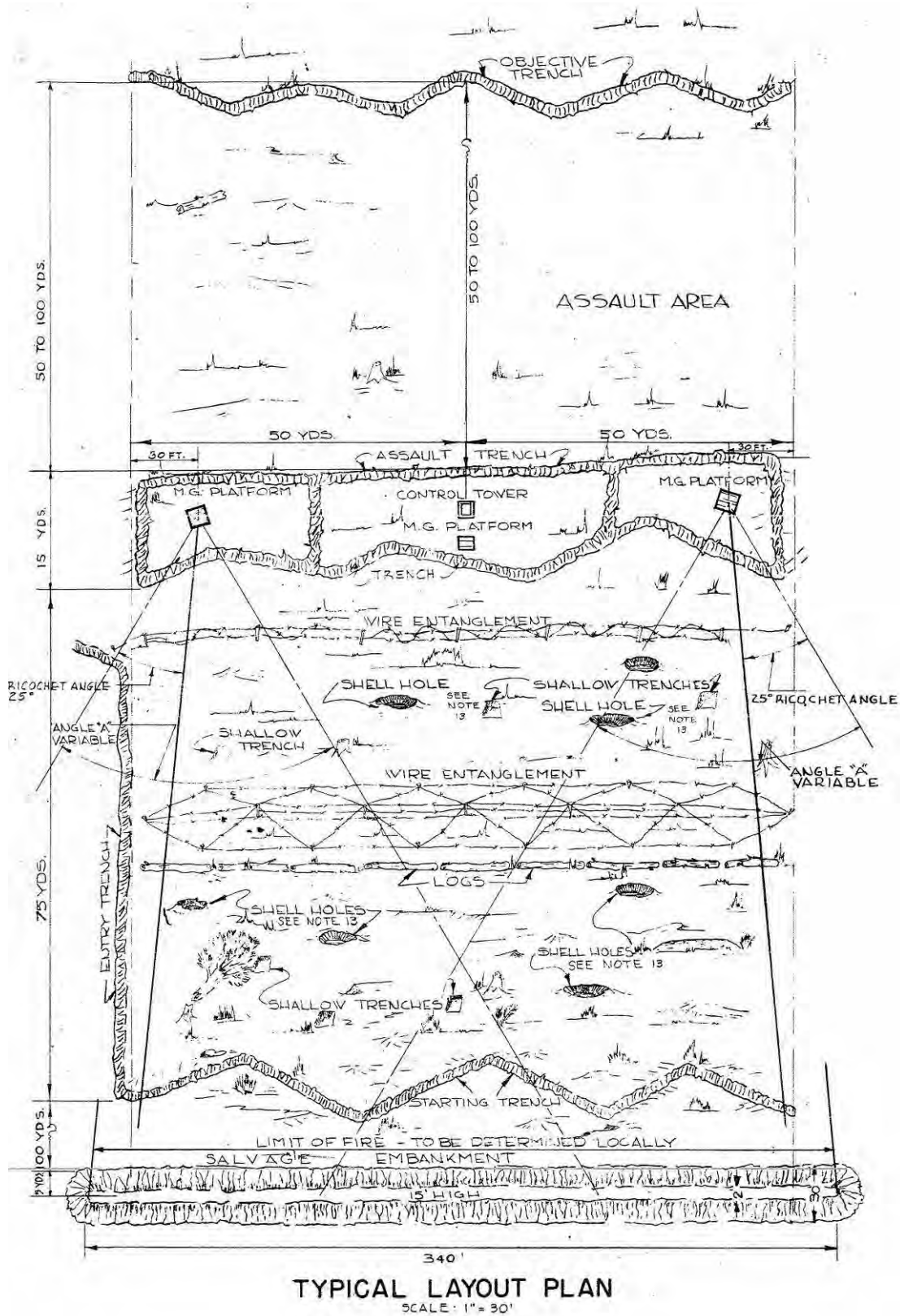


Figure 195. Infiltration course, typical layout plan, Fort Bragg, NC, 1951 (standard drawing 28-13-34 sheet 1 of 1; infiltration course, typical layout and details; 21 November 1951).

Targets and obstacles

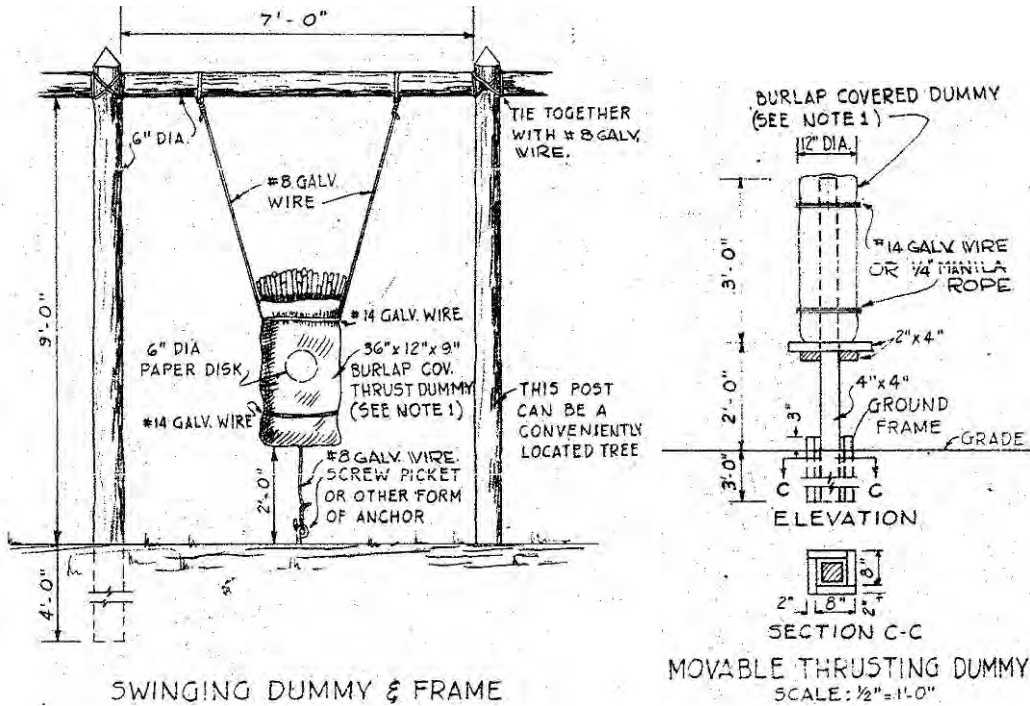


Figure 197. Infiltration course, swinging dummy and frame, and movable thrusting dummy, Fort Bragg, NC, 1951 (standard drawing 28-13-34 sheet 1 of 1; infiltration course, typical layout and details; 21 November 1951).

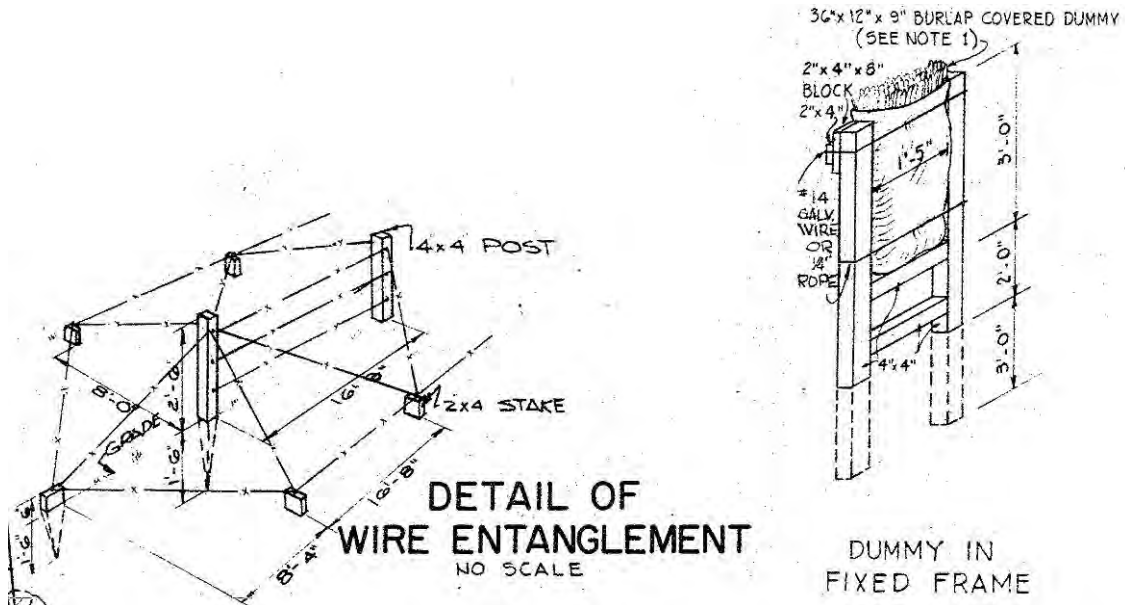


Figure 198. Infiltration course, detail of wire entanglement and dummy in fixed frame, Fort Bragg, NC, 1951 (standard drawing 28-13-34 sheet 1 of 1; infiltration course, typical layout and details; 21 November 1951).

Control tower

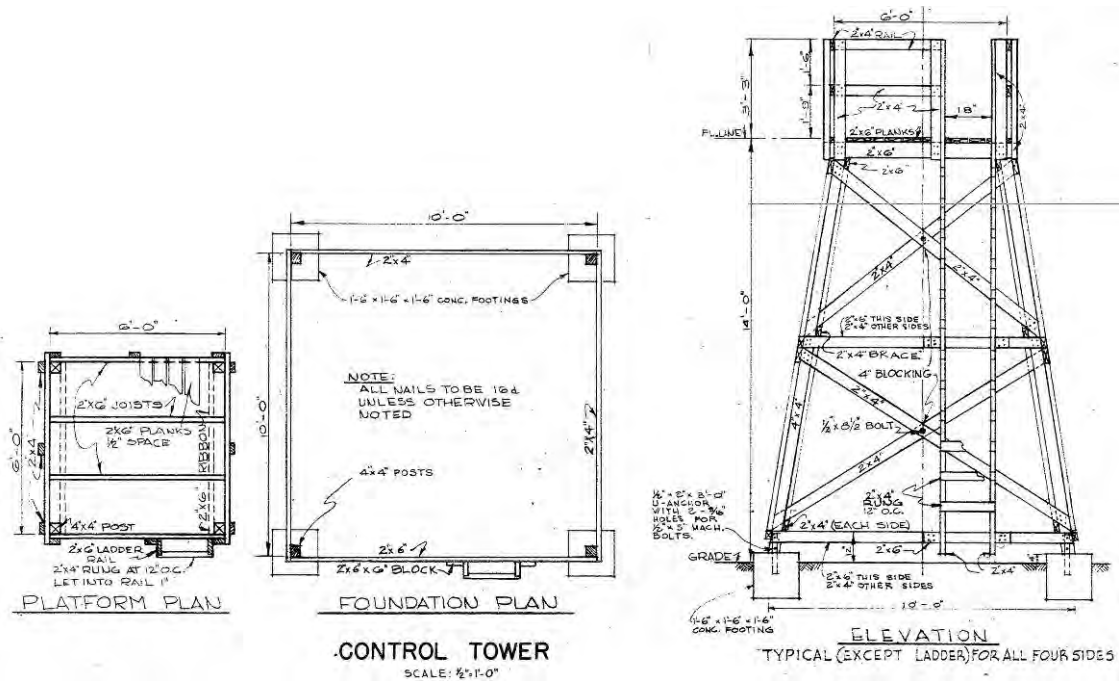


Figure 199. Infiltration course, control tower, Fort Bragg, NC, 1951 (standard drawing 28-13-34 sheet 1 of 1; infiltration course, typical layout and details; 21 November 1951).

Machine gun platform

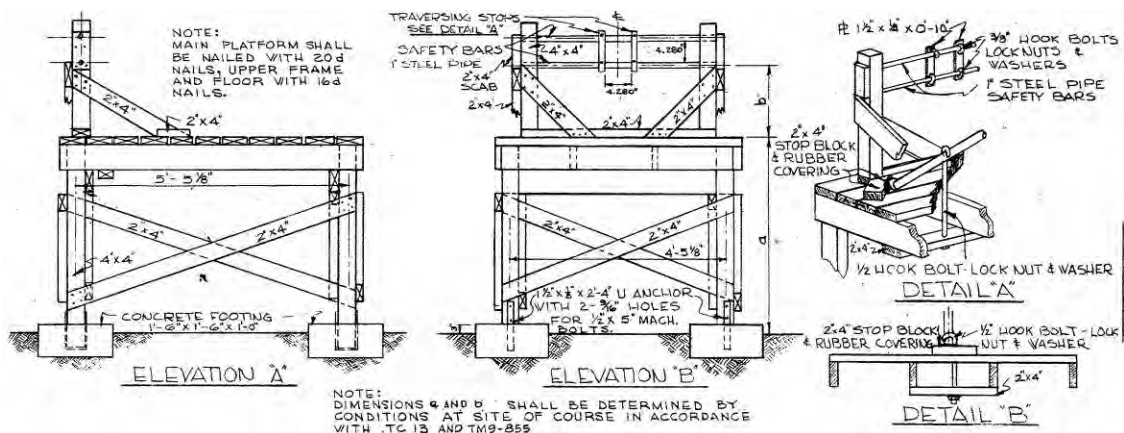


Figure 200. Infiltration course, machine gun platform, elevations A & B, Fort Bragg, NC, 1951 (standard drawing 28-13-34 sheet 1 of 1; infiltration course, typical layout and details; 21 November 1951).

Large scale operation areas

Advanced phases of training for most soldiers included participation in large-scale operations and maneuvers as combat teams or divisions. This kind of training typically required vast areas of land suited to particular

training requirements. Several examples of large-scale operation areas are shown below, followed by descriptions of major training centers established during World War II for specialized training in large-scale airborne, amphibious, and mountain operations.

World War II

Army



Figure 201. Infantry advancing behind an M-3 tank through a smoke screen at Fort Knox, KY, August 1942 (NARA College Park, RG 111-SC WWII, box 85, photo SC144300).



Figure 202. M-4 tanks each with a 75 mm gun at Fort Knox, KY, December 1942 (NARA College Park, RG 111-SC WWII, box 107, photo SC150392).



Figure 203. Medium M-3 tanks attack "enemy" machine gun nests after a bombardment by heavy artillery at Fort Jackson, SC, 24 June 1942 (NARA College Park, RG 111-SC WWII, box 61, photo SC137588).



Figure 204. Parachutists and Airborne infantry carrying machine guns, rifles, and field pieces about to board planes and take off in staged attack on an airport in North Carolina at Fort Bragg, NC, WWII (NARA College Park, RG 111-SC WWII, box 95, photo SC147012).



Figure 205. After landing among trees, these parachutists rush to the attack in preparing to clear way for Airborne troops at Fort Bragg, NC, WWII (NARA College Park, RG 111-SC WWII, box 95, photo SC147006).

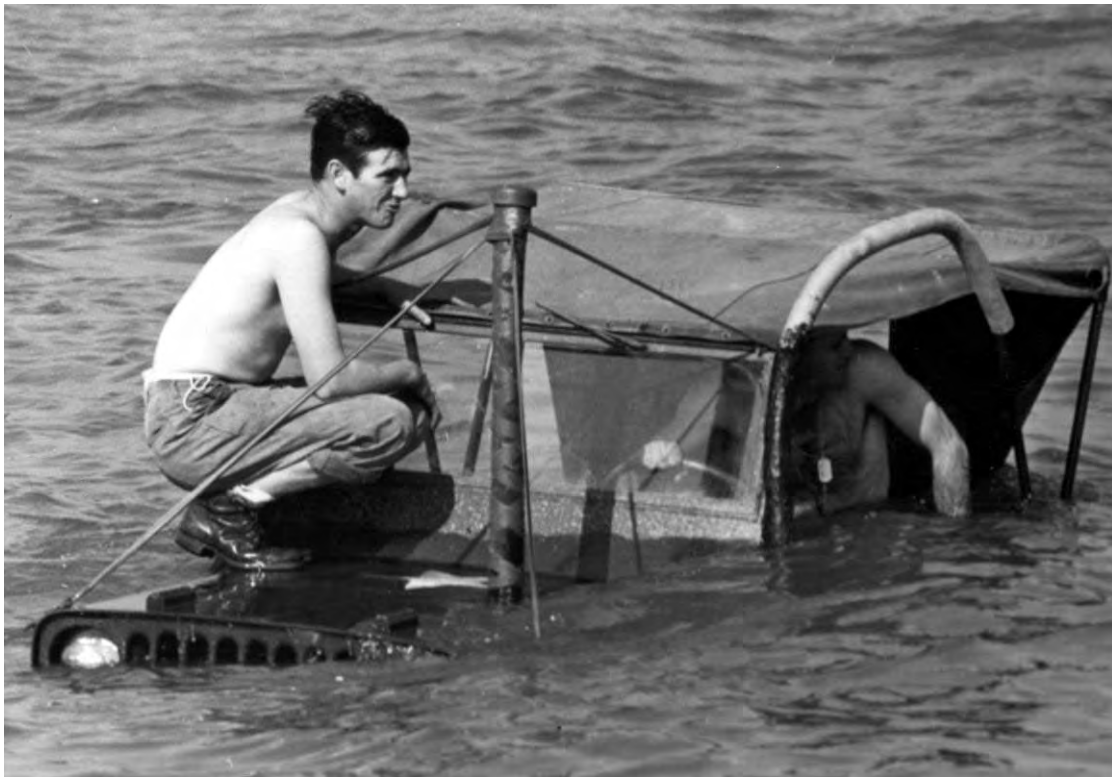
Navy

Figure 206. Amphibious training with a partly submerged truck at NOB Norfolk, VA, 31 October 1943 (NARA College Park, RG 80-G, box 472, photo 20091).

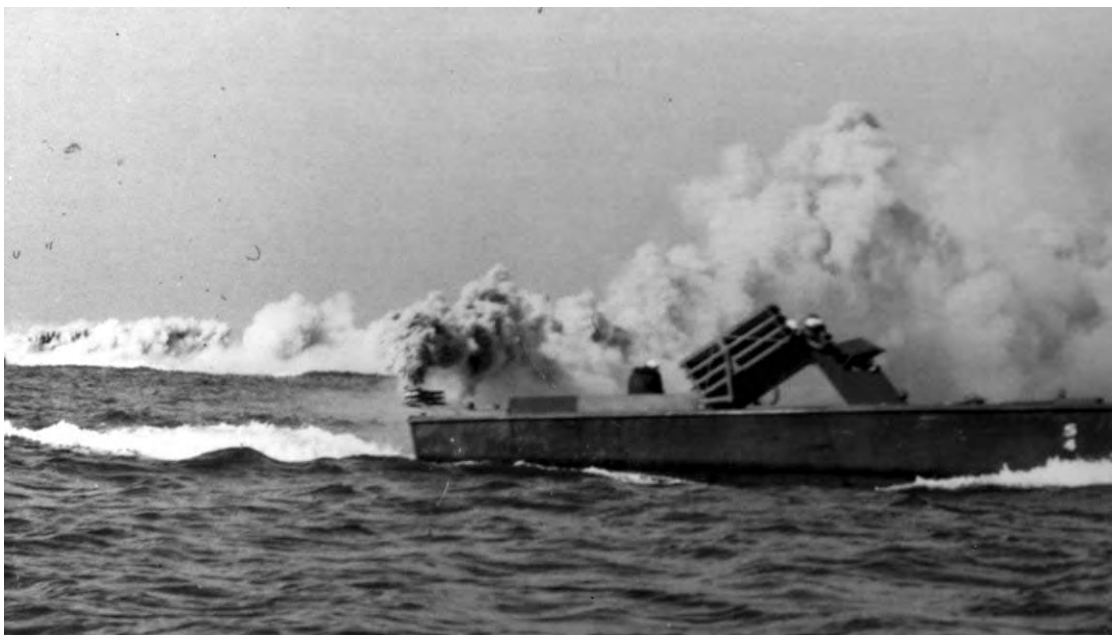


Figure 207. Amphibious training with a smoke screen laid by small craft to cover landing operation at NOB Norfolk, VA, 30 October 1943 (NARA College Park, RG 80-G, box 472, photo 20092).



Figure 208. Seabees at machine gun training during a maneuver at Camp Peary, VA, 28 September 1943 (NARA College Park, RG 80-G, box 194, photo 43129).



Figure 209. Amphibious maneuvers with an open bow door of LST and a Sherman Tank rolling down the ramp at Camp Bradford (now Naval Amphibious Base Little Creek), VA, 20 December 1943 (NARA College Park, RG 80-G, box 199, photo 44030).



Figure 210. Amphibious maneuvers with an amphibious training force filling into LST at Camp Bradford (now Naval Amphibious Base Little Creek), VA, 20 December 1943 (NARA College Park, RG 80-G, box 199, photo 44027).



Figure 211. Crews of two landing craft rubber (LCR) bring their vessels onto the beach at Amphibious Training Base Fort Pierce, FL, 28 November 1943 (NARA College Park, RG 80-G, box 198, photo 43902).



Figure 212. Seabees in a chow line after a practice invasion at unknown location, 8 October 1943 (NARA College Park, RG 80-G, box 377, photo 82511).



Figure 213. Seabees training with men laying a landing strip from boat to beach for unloading tanks at unknown location, 8 October 1943 (NARA College Park, RG 80-G, box 377, photo 82513).



Figure 214. An LCVP loaded with rifle squad ready for disembarking in training operations on the Atlantic coast at unknown location, 1 August 1943 (NARA College Park, RG 80-G, box 392, photo 85064).



Figure 215. Seabees in landing boats prior to an invasion scene at unknown location, 8 October 1943 (NARA College Park, RG 80-G, box 377, photo 82524).



Figure 216. Seabees leap from their boats in an invasion scene at unknown location, 8 October 1943 (NARA College Park, RG 80-G, box 377, photo 82518).



Figure 217. Seabees leave the boats and fall flat on the sand in an invasion scene at unknown location, 8 October 1943 (NARA College Park, RG 80-G, box 377, photo 82516).



Figure 218. Troops learn how to load casualties in a Dukw at Camp Bradford (now Naval Amphibious Base Little Creek), 3 August 1943 (NARA College Park, RG 80-G, box 392, photo 85055).



Figure 219. Seabees during practice landing from an LST with a bulldozer pulling a RADAR trailer overland to the airport at Point Mugu, CA, 13 September 1943 (NARA College Park, RG 80-G, box 404, photo 86806).



Figure 220. Mock invasion with a F4U strafing beach operation at Camp Bradford (now Naval Amphibious Base Little Creek), 9 February 1945 (NARA College Park, RG 80-G, box 1108, photo 30542).

Marine Corps



Figure 221. A landing craft, personnel (LCP) with full infantry load (38 men) in training operations on the Atlantic coast with Mark 21-30 caliber machine guns, 21 August 1943 (NARA College Park, RG 80-G, box 393, photo 85163).



Figure 222. A landing craft, mechanized (LCM) with a load of one truck in training operations on the Atlantic coast with Mark 21-30 caliber machine guns, 21 August 1943 (NARA College Park, RG 80-G, box 393, photo 85158).



Figure 223. An LCI with full infantry load (38 men) in training operations on the Atlantic coast with Mark 21-30 caliber machine guns, 21 August 1943 (NARA College Park, RG 80-G, box 393, photo 85147).



Figure 224. Training of marines in the field at NAS Jacksonville, 20 May 1942 (NARA College Park, RG 80-G, box 291, photo 66014).



Figure 225. Training of marines in the field at NAS Jacksonville, 20 May 1942 (NARA College Park, RG 80-G, box 283, photo 64647).



Figure 226. Night landing operations from LST #498 at San Clemente Island, CA, 16 February 1944 (NARA College Park, RG 80-G, box 629, photo 224349).

Post-WWII

Army



Figure 227. West Point cadets observe a jump by the 2nd Battalion Combat Team, 505th Airborne Infantry Regiment at Fort Bragg, NC, 20 July 1949 (NARA College Park, RG 111-SC WWII, box 677, photo SC322649).



Figure 228. Members of the Royal Egyptian military witness a jump by members of the 82nd Airborne at the D-Z Ray Jump Field at Fort Bragg, NC, 7 May 1947 (NARA College Park, RG 111-SC WWII, box 669, photo SC319380).



Figure 229. Demonstration jump for the officers of the ORC Contact Camp at Fort Bragg, NC, 2 October 1948 (NARA College Park, RG 111-SC WWII, box 641, photo SC309922).



Figure 230. Mock war with helicopters (for the first time), smoke bombs, and infantry at Fort Bragg, NC, 17 September 1952 (NARA College Park, RG 111-SC WWII, box 249, photo SC423557).



Figure 231. Assault troops crossing the river in assault craft and by pontoon bridge at Fort Bragg, NC, September 1952 (NARA College Park, RG 111-SC WWII, box 236, photo SC406848).



Figure 232. After assault troops have been landed and established a beachhead, a battalion crosses the river in assault craft and by pontoon bridge at Fort Bragg, NC, September 1952 (NARA College Park, RG 111-SC WWII, box 236, photo SC406849).



Figure 233. A 105 mm recoilless rifle mounted on a jeep during Exercise Flashburn at Fort Bragg, NC, 22 April 1954 (NARA College Park, RG 111-SC WWII, box 277, photo SC457838).

Operation Tarheel

In April 1949, a relatively obscure milestone took place on the training ranges near Fort Bragg, NC. Operation Tarheel, a month-long tactical exercise marked the final operational use of gliders by the 325th Glider Infantry: the last such regiment retained on active duty.



Figure 234. Operation Tarheel with a patrol of aggressor soldiers led by scout dog "Rex" at Fort Bragg, NC, 11 April 1949 (NARA College Park, RG 111-SC WWII, box 701, photo SC333552).



Figure 235. Operation Tarheel with 82nd Airborne troops attacking an objective at Fort Bragg, NC, 11 April 1949 (NARA College Park, RG 111-SC WWII, box 701, photo SC333505).



Figure 236. Operation Tarheel with troops of a 75 mm battery firing on the "enemy" at Fort Bragg, NC, 9 January 1950 (NARA College Park, RG 111-SC WWII, box 701, photo SC333503).



Figure 237. Operation Tarheel with three aggressor soldiers fire on a position at Fort Bragg, NC, 18 May 1949 (NARA College Park, RG 111-SC WWII, box 673, photo SC320913).



Figure 238. Operation Tarheel with artillery battalion ready to fire after personnel jump and monorail drop of airborne artillery at Fort Bragg, NC, 5 May 1949 (NARA College Park, RG 111-SC WWII, box 702, photo SC333669).



Figure 239. Operation Tarheel with aggressor soldiers putting up field wire at Fort Bragg, NC, 7 May 1949 (NARA College Park, RG 111-SC WWII, box 701, photo SC333567).



Figure 240. Operation Tarheel with aggression soldiers capture mixed recon squad of U.S. troops at Fort Bragg, NC, 18 May 1949 (NARA College Park, RG 111-SC WWII, box 701, photo SC333573).



Figure 241. Operation Tarheel at aggressor headquarters at Fort Bragg, NC, 18 May 1949 (NARA College Park, RG 111-SC WWII, box 701, photo SC333566).



Figure 242. Operation Tarheel with a public address unit used to produce sounds for the maneuvers at Fort Bragg, NC, May 1949 (NARA College Park, RG 111-SC WWII, box 701, photo SC333561).



Figure 243. Operation Tarheel with aggressor soldiers viewing aerial photos for enemy intelligence at Fort Bragg, NC, 18 May 1949 (NARA College Park, RG 111-SC WWII, box 701, photo SC333557).



Figure 244. Operation Tarheel with addressor tank going on a 3-day problem at Fort Bragg, NC, 18 May 1949 (NARA College Park, RG 111-SC WWII, box 701, photo SC333554).



Figure 245. Operation Tarheel with BAR gunner emplaced on roadblock overlooking strategic crest in battle area at Fort Bragg, NC, 18 May 1949 (NARA College Park, RG 111-SC WWII, box 703, photo SC334455).



Figure 246. Operation Tarheel with 82nd Airborne retreating across Rockfish Creek when attacked by the aggressor at Fort Bragg, NC, 12 May 1949 (NARA College Park, RG 111-SC WWII, box 703, photo SC334407).



Figure 247. Operation Tarheel with 82nd Airborne in full retreat across Rockfish Creek after rout by aggressor at Fort Bragg, NC, 12 May 1949 (NARA College Park, RG 111-SC WWII, box 703, photo SC334411).



Figure 248. Operation Tarheel with U.S. troops ambushed by aggressor forces during recon patrol with prisoners are taken in for interrogation at Fort Bragg, NC, 18 May 1949 (NARA College Park, RG 111-SC WWII, box 702, photo SC333673).

Navy



Figure 249. Troops practice the "gung-ho" charge in preparation for maneuvers in the Caribbean Sea at NAB Little Creek, VA, 1947 (NARA College Park, RG 127-GR, box 9, folder A, photo 304540).

Marine Corps

Figure 250. Assault troops of the 2nd Marine Division come ashore at Onslow Beach, NC during the opening phase of Exercise Quick Kick, 7 May 1962 (NARA College Park, RG 111-SC post-1955, box 373, photo SC593548).



Figure 251. Marines launch an assault by land, sea, and air during Operation Kirlen Eagle at Montague Island, Alaska, 5 January 1976 (NARA College Park, RG 127-GG-591, box 24, photo A357934).



Figure 252. A tank infantry team moves out during training exercises at MCB Camp Lejeune, NC, 8 April 1959 (NARA College Park, RG 127-GG-598, box 24, photo A18040).



Figure 253. Marine Rifleman move in for the final phase of the assault demonstration at MCB Camp Lejeune, NC, 21 May 1969 (NARA College Park, RG 127-GG-601, box 24, photo A704412).



Figure 254. Camouflaged Marine recruits from MCRD San Diego practice the low crawl with M-16 rifles during infantry training at MCB Camp Pendleton, CA, 17 October 1974 (NARA College Park, RG 127-GG-601, box 24, photo A230807).

Airborne Command and Center

The airborne effort got started as the world saw the effectiveness of Germany and other countries dropping airborne troops into areas to take over and secure them. The War Department initially created a test platoon (at Lawson Field, Fort Benning, under the command of the Infantry School) to develop the methods, equipment, and training of airborne troops. The initial success of early training efforts and maneuvers exceeded the expectations of high-ranking officers, and the War Department began the creation of mobile and self-sustaining Parachute Battalions filled with some of the best officers and troops in the Army Ground Forces. The Provisional Parachute Group Headquarters was activated on 10 March 1941, and was charged with developing a permanent structure for training, organization, budget, and staff of the expanding parachute arm (Ellis 1-8).

Initial training of parachute troops included regular infantry training, with the addition of instruction in compass and map reading, maintenance of parachute equipment, and jump and landing training. Troops also underwent additional physical toughening, including stress on calisthenics, long marches, daily three-mile runs, and other exercises. Squad, platoon, and company training was performed first, then battalions performed combat training in large exercises. Parachute troops were frequently requested to participate in maneuvers and demonstrations, which made sticking to a

training program difficult. Parachute shortages also hampered early training. In January 1942, the existing Parachute Battalions were made into two Parachute Regiments, and two additional Parachute regiments were created when enough troops finished their parachute training shortly thereafter (Ellis 8-12).

In order to ensure proper equipment, uniformity, and high quality training for all parachute troops, the Airborne Command was activated in March 1942 and moved to Fort Bragg in May 1942. Much work was done to develop service units (particularly signal), to perfect supply by air (glider training centers were established and gave advanced training to airborne troops), to enhance equipment (lightweight weapons and vehicles were developed), and to improve and expand training (Parachute school at Fort Benning was expanded and many other facilities for air training were built) (Ellis 12-26). In March 1944, the Airborne Command was renamed the Airborne Center. The Center was less extensive than the Command because of the reduction of troops due to overseas shipments, and the focus on training of replacement crews (Ellis 26-32).

Airborne Training was done in phases. First was individual training, which consisted of mental and physical hardening of troops by teaching them to withstand fatigue, limited rations, and loss of sleep, using only minimal equipment, and participating in long, timed marches with heavy equipment. Traditional training was also performed on "obstacle courses, night firing courses, street fighting courses, etc., with emphasis on the method of the airborne soldier's entry into combat" (Ellis 54). Unit training was conducted in platoons, companies, and battalions, individually and as a combat team with the emphasis on careful preparation before and teamwork after landing. Signal, Engineer, and other units were trained in preparation for air transportation and operating with minimal equipment. Phase three was combined training, where combat team and divisional tactical exercises were performed. Ground cooperation and operation were stressed, and troops were subject to overhead fire. Phase four was airborne training, which consisted of three phases. The first was final instruction and training in preparation for performing airborne operations. The second was training at glider airbases, where loading, unloading, test flights for critical loads, and orientation flights for all personnel were performed. The final phase was a flying command post exercise, where each headquarters took off and landed at specific times and places, and were then flown back to centers in gliders (Ellis 54-56).

During WWII, “the doctrine of employment gradually developed from the initial thought of small combat groups landing within enemy territory under cover of darkness for the purpose of sabotage and espionage, to mass landings in daylight of two or more reinforced divisions in the face of determined enemy resistance.” Training evolved over time to achieve such goals (Ellis 1).

Amphibious training center

Shortly after the U.S. entered WWII, it became apparent that large-scale landings on enemy shores would have to be planned and executed effectively in order to win the war. The combined Army-Marine units under Navy control, who were trained in amphibious operations at the time, were too small in number and insufficiently trained (Becker 1). On 22 May 1942, the War Department charged the Army Ground Forces with the creation of an Amphibious Training Center, to train twelve divisions in shore-to-shore amphibious operations by 1 February 1943. “The general plan was to establish three amphibious training centers, located at Camp Edwards, Massachusetts, Carrabelle, Florida, and Fort Lewis, Washington. Divisions were to be rotated through these centers to receive shore-to-shore training” (Becker 5).

Due to the unsettled status on amphibious training in higher headquarters, the War Department reduced the twelve division requirement to five divisions, and broadened the mission of the Amphibious Training Center to include more diversified training at Carrabelle, “comparable to a well-established service school” (Becker 9). Training never reached Fort Lewis, Washington, and due to battles in higher headquarters with Navy officials over whose responsibility amphibious training was, the school was disbanded on 10 June 1943, and all facilities were turned over to the Navy (Becker 1-17).

The difficulty in obtaining training equipment and materials, the lack of trained officers to conduct training, and the lack of boats and trained boat operators of the Engineer Amphibian Command were sources of constant trouble to the Amphibian Training Center, and were only overcome by endless improvising and working long hours. For example, loading and debarking were taught using mock-up boats built on dry land, and soldiers jumped over a rifle held two feet above ground to simulate jumping off a boat. Vehicle drivers learned how to maneuver trucks inside of a boat using logs set up with the same dimensions of the inside of boats. Men hold-

ing different colored flags were used to represent tanks, mortar squads, or whatever feature was needed. Moving boats and the rolling sea were simulated with jeeps made to look like boats driving on a rolling roadway, allowing soldiers to practice firing machine guns from a boat rocking on waves. Other improvisations included using wooden rifles to teach battle firing positions, and using dummy dynamite and detonators to teach preparation of explosive charges (Becker 31-48).



Figure 255. Improvised mock-ups took the place of boats (Becker, 1946, p 41).



Figure 256. Debarkation over a simulated ramp (Becker, 1946, p 47).



Figure 257. Drivers were trained in outline boats (Becker, 1946, p 43).



Figure 258. Simulated rolling sea boat firing course (Becker, 1946, p 62).



Figure 259. Improvised outdoor classrooms (Becker, 1946, p 33).

At Camp Edwards, three regimental combat teams and their officers were trained in three ten-day periods in a large number of practical amphibious operations. A Special Commando Task Force with its own officers was also trained in all aspects of raiding operations. Training culminated in a three-day mock invasion of an island occupied by German troops, completely planned and executed by the Division as a whole. Two more Divisions followed, with their training and Division tasks being improved by the experience gained from previous Divisions (Becker 49-56).



Figure 260. Maneuver area (Becker, 1946).



Figure 261. Offshore sandbars interfered with training (Becker, 1946).



Figure 262. Barrage balloons were used in the exercises (Becker, 1946, p 68).

At Camp Gordon Johnston (Carrabelle, FL), more intense training in a broader range of activities was possible with an increase in experience, instructors, equipment, and land. Army Ground Forces wanted more hardened troops that could work in harmony with Navy operations. Discipline and organization in boat and beach operations, often lacking at Camp Edwards, were stressed. Training of whole Divisions replaced combat team training, and realism was improved in every stage of training. Nazi cities were constructed for training in rooftop combat, wall climbing, and use of live ammunition and explosives. Hand-to-hand combat including Judo was taught, and troops were better prepared for all aspects of battle (Becker 57-70).



Figure 263. The commandos were tough (Becker, 1946, p 51).



Figure 264. Hip-firing of a light machine gun on battle course (Becker, 1946, p 64).

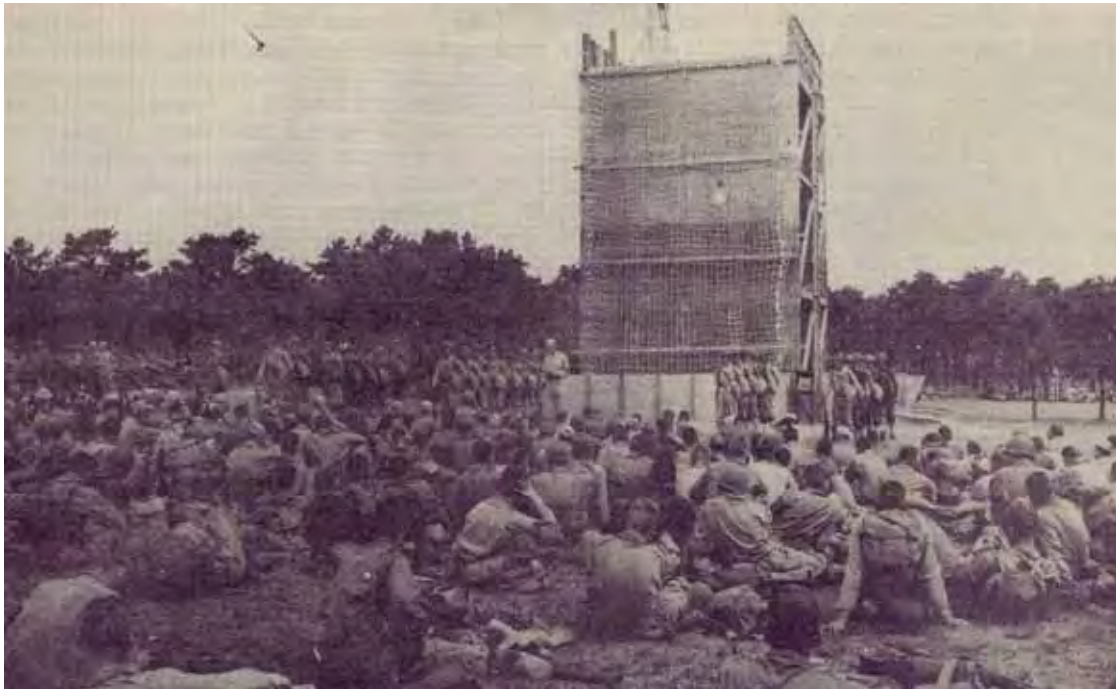


Figure 265. Instruction in cargo-net scaling (Becker, 1946, p 51).



Figure 266. The Infiltration course (Becker, 1946, p 59).

Scout and raider training

“Before there were Navy SEALs or Underwater Demolition Teams (UDT) or Naval Combat Demolition Units (NCDU), there were Scouts and Raiders. Formed as a joint Army-Navy beach recon unit eight months after Pearl Harbor, the first S & R boat crews underwent intense training at Amphibious Training Base (ATB) Little Creek in Virginia before deploying to North Africa where they earned eight Navy Crosses. This was just the first of many wartime missions for the versatile Scouts and Raiders.

In January 1943, the Scouts and Raiders School moved to Fort Pierce, FL. Until December of 1943 when the school became all Navy, the instructor cadre and the trainees were both Army and Navy men. The training course included running, swimming, obstacle course, log PT, hand-to-hand combat, and classes in Signaling, Radio, Gunnery, etc. According to John "Barry" Dwyer in his comprehensive book SCOUTS AND RAIDERS, "When LT Draper Kauffman was sent to Fort Pierce in July 1943 to form the first NCDUs, he adopted and condensed the S & R PT course in what his men called "Hell Week", which evolved into the physically and psychologically demanding ordeal known as BUD/S, Basic Underwater Demolition / SEAL Training, which must be survived by anyone wishing to become a Navy SEAL."

The first ten volunteers for S & R were big, athletic men from the Navy's Physical Training Program headed up by Commander Gene Tunney. Among them was Phil H. Bucklew who would earn two Navy Crosses and go on to become the recognized “father of U S Naval Special Warfare”. Another S & R veteran, Richard Lyon, would become Rear Admiral and the first designated Special Warfare Officer to attain flag rank. Today Admiral Lyon is mayor of Oceanside, CA.

After North Africa, the Scouts and Raiders participated in landings in Sicily, Salerno, Anzio, the Adriatic, Normandy, and Southern France. They also served in the Pacific on a variety of assignments, as Beachmasters, UDTs, and even helped train Nationalist Chinese guerrillas for operations against Japanese forces” (“Scouts and Raiders”).



Figure 267. Phase of raider training at Amphibious Training Base Fort Pierce, FL, 10 December 1943 (NARA College Park, RG 80-G, box 862, photo 264404).



Figure 268. Log PT phase of raider training at Amphibious Training Base Fort Pierce, FL, 10 December 1943 (NARA College Park, RG 80-G, box 862, photo 264408).



Figure 269. Seven-man rubber boat phase of raider training at Amphibious Training Base Fort Pierce, FL, 10 December 1943 (NARA College Park, RG 80-G, box 862, photo 264395).



Figure 270. Seven-man rubber boat phase of raider training at Amphibious Training Base Fort Pierce, FL, 10 December 1943 (NARA College Park, RG 80-G, box 862, photo 264398).



Figure 271. Navigation class phase of raider training at Amphibious Training Base Fort Pierce, FL, 9 December 1943 (NARA College Park, RG 80-G, box 862, photo 264385).



Figure 272. Radio class phase of raider training at Amphibious Training Base Fort Pierce, FL, 9 December 1943 (NARA College Park, RG 80-G, box 862, photo 264386).



Figure 273. Gunnery phase of raider training at Amphibious Training Base Fort Pierce, FL, 9 December 1943 (NARA College Park, RG 80-G, box 862, photo 264384).



Figure 274. Obstacle course phase of raider training at Amphibious Training Base Fort Pierce, FL, 9 December 1943 (NARA College Park, RG 80-G, box 862, photo 264392).



Figure 275. Obstacle course phase of raider training at Amphibious Training Base Fort Pierce, FL, 9 December 1943 (NARA College Park, RG 80-G, box 862, photo 264391).



Figure 276. Training of Scouts and raiders for hand-to-hand combat at Amphibious Training Base Fort Pierce, FL, 10 December 1943 (NARA College Park, RG 80-G, box 539, photo 210908).



Figure 277. Training of Scouts and raiders for hand-to-hand combat at Amphibious Training Base Fort Pierce, FL, 20 December 1943 (NARA College Park, RG 80-G, box 539, photo 210912).



Figure 278. Training of scouts and raiders for hand-to-hand combat at Amphibious Training Base Fort Pierce, FL, 20 December 1943 (NARA College Park, RG 80-G, box 539, photo 210909).

Amphibious jeep training



Figure 279. Amphibious jeep demonstration at Camp Blanding, FL, 10 February 1943 (NARA College Park, RG 111-SC WWII, box 131, photo SC166880).



Figure 280. Men on jeep entering water during amphibious jeep demonstration at Camp Blanding, FL, 10 February 1943 (NARA College Park, RG 111-SC WWII, box 131, photo SC166878).

Reconnaissance training

Figure 281. A reconnaissance is shown crossing a stream on raft constructed for recon type training at MCB Camp Lejeune, NC, no date (NARA College Park, RG 127-GG-616, box 25, photo A450580).



Figure 282. Fixing an outboard motor on a rubber reconnaissance boat at MCB Camp Lejeune, NC, 4 October 1962 (NARA College Park, RG 127-GG-620, box 25, photo A341958).

Scuba training

Figure 283. SCUBA training at MCB Camp Lejeune, NC, 4 October 1962 (NARA College Park, RG 127-GG-620, box 25, photo A341963).



Figure 284. Checking SCUBA equipment before entering the waters of the Atlantic at MCB Camp Lejeune, NC, 30 April 1975 (NARA College Park, RG 127-GG-620, box 25, photo A452532).

Desert Training Center and California-Arizona Maneuver Area (C-AMA)

“Shortly after the United States entered WWII, the War Department foresaw the possibility of our Army fighting in the deserts of Africa. The Desert Training Center was instituted under the Army Ground Forces for the special purposes of training mechanized units to live and fight in the desert, to test and develop suitable equipment, and to develop tactical doctrines, technique, and training methods” (Meller Prefatory Note). Maj. Gen. George S. Patton selected the Arizona/California site for the Center, and trained the I Armored Corps under Spartan conditions until he and his troops were hastily withdrawn in 1942 (Meller 12-18).

Maj. Gen. Alvan C. Gillem, Jr., and the II Armored Troops replaced them soon after, and “encountered confused conditions...because no link held administrative matters together between commands” (Meller 31). In an effort to overcome this confusion, train all types of units, and increase realism, the center was expanded to create a simulated overseas theater of operations in early 1943. The Center was renamed the California-Arizona Maneuver Area in October 1943 to reflect the change from being a desert training facility to a more broad ranged combat training center. With the increased shipment overseas of service units that could not be replaced at the Center, General McNair recommended that the C-AMA be closed in December 1943. The War Department accepted this recommendation as the number of Divisions and air units remaining in the United States was also dwindling (Meller Prefatory Note).

“General McNair and others considered combat training in the Desert Training Center to be the best in the United States” (Meller 44). General Walker, who commanded the XX Corps in Germany, said the center was even more valuable than his previous war experience. “The top command had benefited most, gaining confidence and perspective from the direction of large operations in the desert,” he said (Meller 44). The spacious and varied terrain with no population permitted exercises to be conducted over wide expanses as would have to be carried out overseas. The toughness of conditions in nature and weather proved invaluable in the hardening of troops, and preparing them for realistic and varied war conditions. “Men learned not only how to fight other men but nature also. As soon as they had defeated nature a few times – as by enduring some thirst, getting lost and finding themselves, fixing up a car that had broken down on a desert trail – they gained confidence in themselves, and that spirit remained with them” (Meller 50).

Training activities at the Desert Training Center and C-AMA included movement across country, navigation, reconnaissance, combat intelligence, counterintelligence and liaison, dispersion of vehicles during the march, halts and in bivouac, aggressive action by dismounted individuals and small units against armored vehicles, laying and removal of mine fields, antiaircraft defenses with both organic and task weapons and units, rapid close-in air support of ground units, artillery observation by liaison planes, camouflage, night operations, battlefield recovery and evacuation of armored vehicles and other heavy equipment, day-by-day maintenance of motor vehicles, driver training with emphasis on night driving and driver maintenance, realistic supply of all classes, including ammunition, with actual tonnage, especially at night, and supply by air (Meller 48-50).

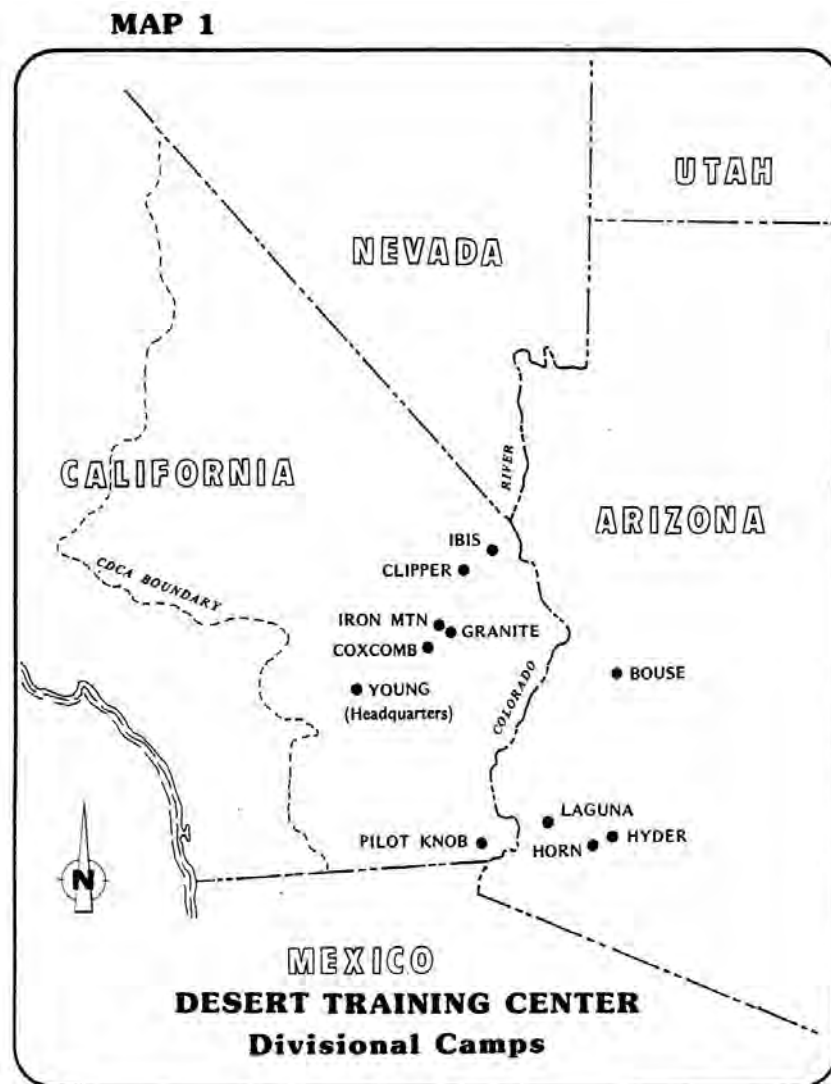


Figure 285. Desert Training Center divisional camps map (Meller, 1946).

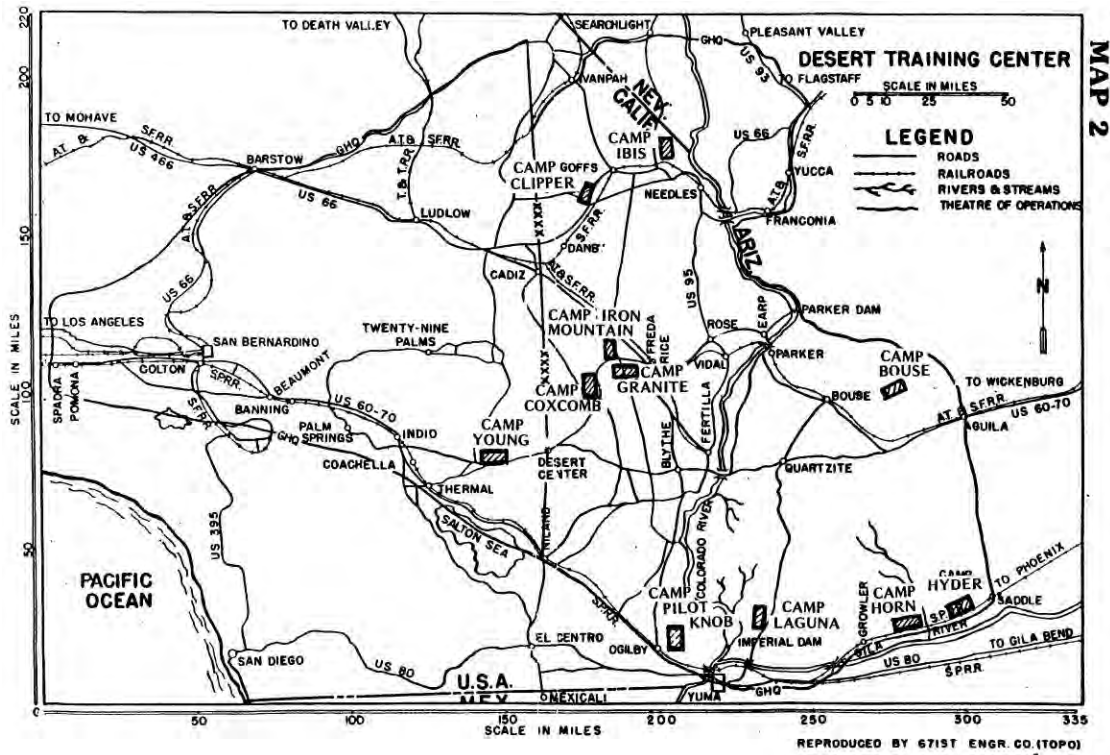


Figure 286. Desert Training Center map (Meller, 1946).



Figure 287. Tank commanders man anti-aircraft guns while planes drop sacks of flour-simulating bombs (Meller, 1946, p 45).



Figure 288. Night firing at aerial targets with automatic weapons, and rocky terrain north of Ogilby, CA (Meller, 1946, p 49).



Figure 289. Desert terrain—sand dunes NW of Yuma, AZ, and column of M-3 tanks (Meller, 1946, p 49).

Mountain and winter training

In the 1939 conflict between Finland and the Soviet Union, tiny Finland with “Ski troops, clothed in white to mask their moves, disrupted Russian supply columns and won victory after victory” (Govan 1). America, already trying to make advances in food, clothing, equipment, and transportation for troops in severe winter conditions, learned much from Finland, and saw that such preparation could be decisive in the battles of WWII (Govan 1-3). While resources were not available and troops were not sufficiently trained in any form of combat to establish a group of specialized winter troops in 1940, a foundation was laid by Army Ground Forces for future winter training. The army allotted each commander \$12,000 for the special instruction of individuals at ski centers, and for the hire of civilian instructors. The National Ski Association also volunteered Ski Patrols to help instruct, develop winter training, and to become expert assistants in dif-

ferent winter regions of the country. A small force in high altitudes was developed to test materials and be available to instruct if the mountain training program was expanded (Govan 1-4).

The need for troops specially trained in mountain operations was again seen in 1941 by the success of the Germans in the Balkans with their armored and other units specially trained in mountain operations, and the failure of the British in Norway and the Italians in Albania, having no troops sufficiently trained or equipped to operate in mountain terrain. General McNair resisted the development of a special mountain division, preferring the training of infantry and artillery battalions to operate effectively in mountainous terrain. With his recommendation, the small test force was expanded to an infantry and pack artillery battalion led by Colonel Rolfe at Fort Lewis, Washington, under little supervision from the war department. Two motels were rented at Mount Rainier, Washington, and each unit was given regular training in addition to two months of intense ski training from a group that included many of the famous skiers in America (Govan 4-5).

Increased concern by the War Department about the lack of troops trained in mountain operations led to the activation of the Mountain Training Center at Camp Carson, Colorado on 3 September 1942, to be moved to the newly constructed Camp Hale, Colorado on 16 November. New recruits received basic training, while older recruits learned how to ski, snowshoe, and take care of themselves under mountain conditions. Lack of experience among officers, inadequate supervision by higher headquarters, and indefiniteness of the mission led to inadequate and confused training at the Center. Battalion maneuvers of the 87th Infantry in February of 1943 were reported to be a miserable failure. However, officers and enlisted men from the Center were also asked to assist in the mountain training of the 36th and 45th Divisions at the West Virginia Maneuver Area. This training was very valuable in their mission of invading Sicily (Govan 4-9).

Interest in training troops for both jungle and mountain conditions led to the activation of the 10th Light Division (Alpine) at Camp Hale in June 1943. The Mountain Training Center was continued to keep a staff of instructors in mountain training ready, and to train the new Light Division (Govan 10). The 10th Light Division was later made into a standard Division and transferred to Fort Swift, TX, due to lack of proper organization

and equipment, and because “combat reports from Italy had indicated that a standard division could be adapted to service in mountainous terrain with comparatively little difficulty, while it was still questionable whether a mountain division could operate effectively outside of its special mission” (Govan 11-12). The new plan was for specialists to train individual units, which had already received basic training, in mountain warfare as needed. The supplies and equipment developed, and knowledge of first aid and care in extreme conditions that came from mountain training were invaluable to troops in the European theater. The 10th Mountain Division, and the campaign of standard trained units in France, Germany, and Italy, proved that the Mountain Training Center was successful in helping troops win crucial battles in the winter of 1944-1945 (Govan 12-13).

Mountain Training Center

The Mountain Training Center was often a center of conflict between the civilians who had come into the army with superior skills and knowledge of mountaineering, and the military officials over the Center who wanted to achieve army discipline. Skiers, muleskinners, forest rangers, trappers, prospectors, and all types of men used to living and working in the mountains came largely as a result of the National Ski Patrol’s recruiting efforts. To the extent that the two groups worked together, success in the Center was achieved (Jay Prefatory Note). Eventually, officers and personnel from the MTC became invaluable, as they taught mountaineering skills like rock climbing to troops in West Virginia, and across the globe (Jay 75-84).

“No specific directive on mountain training was issued from Army Ground Forces,” and AGF directives were often inapplicable due to the unique nature of the training, so “it was left to the Mountain Training Center Headquarters Staff to formulate their own training policy” (Jay 63).

In January 1943, MTC Headquarters issued a directive for winter and mountain training that included training in skiing, snowshoeing, preparation of rations, using various types of tents, trail hygiene, avalanche precautions, marching technique, and freighting supplies over snow with toboggans, snow motor vehicles, and other means. This training was later extended to include installation and operation of tramways, ice climbing, rock climbing, scouting, patrolling, camouflage discipline, belaying ropes and climbing, “intensive training in packing, saddling, and general management of mules,” and other activities. Dogs were also trained to be sled and sentry dogs, and men and dogs were trained to work together as messengers. The training time was also later lengthened to allow soldiers to

acclimatize to the elevation. Maneuvers and tactics were always difficult to pull off due to weather and terrain challenges, and the lack of uniformity of circumstances in which a real operation might take place (Jay 63-74, 85-86).

Ski training

The Ski and Mountaineering Schools were the most successful of the many schools developed for the Mountain Training Center. Skiing was the main training activity. "For eight weeks, six days a week, eight hours a day, snow or shine, the troopers learned skiing the military way (designed for safety and endurance while carrying heavy packs). All military training was temporarily set aside to leave time for this important task." The training ended in the running of an intensive course with a heavy pack (Jay 16-21).



Figure 290. Troopers going through phases of the military ski qualification course on Mt. Rainier. March 1942 (Jay, 1948, p 19).



Figure 291. Knees bent, ski tips together (Jay, 1948, p 18).



Figure 292. Mountain troopers receive ski instruction on Mt. Rainier, winter 1942 (Jay, 1948, p 17).



THE COOPER HILL SKI AREA



Figure 293. Cooper Hill ski lift and area (Jay, 1948).



Figure 294. A private instructing an officer in the correct way of using wax on skis at Mt. Rainier. February 1942 (Jay, 1948).

Transporting loads

In January 1943, MTC Headquarters issued a directive for winter and mountain training that included freighting supplies over snow with toboggans, snow motor vehicles, and other means. This training was later extended to include “intensive training in packing, saddling, and general management of mules,” and other activities (Jay, 1948, pp.63-74, 85-86).



Figure 295. A T-28 towing a load on a trail traversing a steep slope (Jay, 1948).



Figure 296. Members of the pack artillery on snowshoes dragging part of the 75MM pack howitzer on a sledge with special harnesses (Jay, 1948).



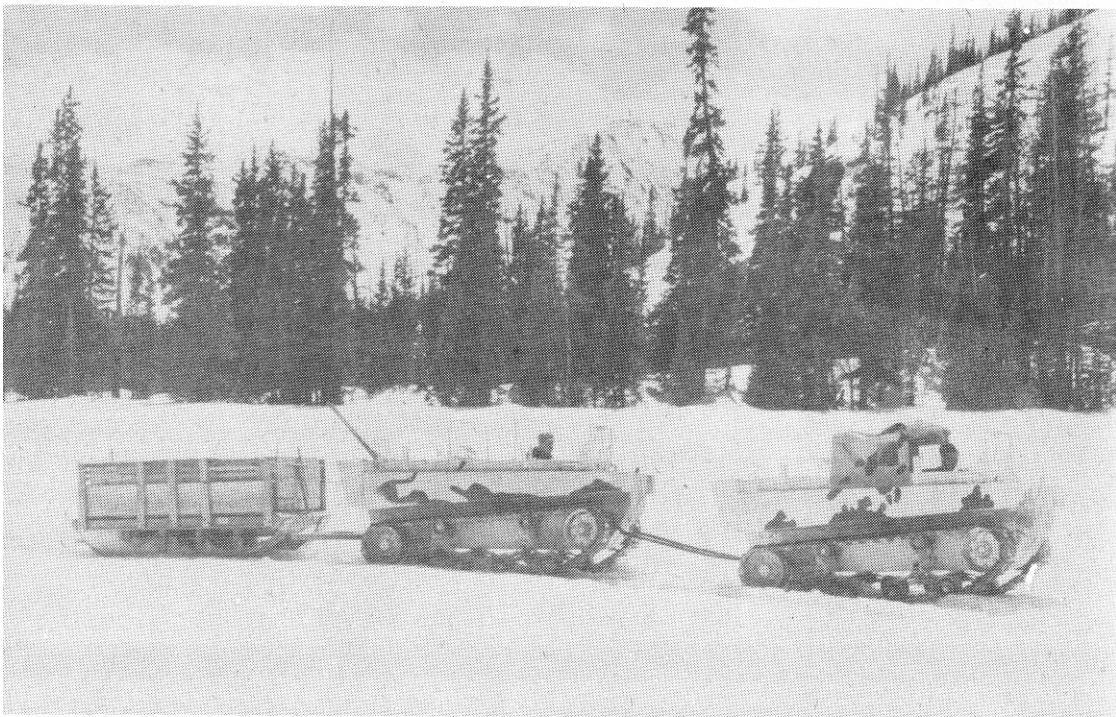
Figure 297. Troop hiking (Jay, 1948, p 20).



Figure 298. Exchanging lash ropes while learning to lash mule loads at the packing school, Fort Lewis. July 1942 (Jay, 1948, p 67).



THE ELIASON MOTOR TOBOGGAN TESTED ON MT. RAINIER. THOUGH SPEEDY ON PACKED SNOW, THIS MACHINE PROVED UNSATISFACTORY IN HEAVY POWDER. IT WAS LATER REPLACED BY THE M-28 AND THE M-29.



THE M-28 HITCHED IN TANDEM

Figure 299. Training with snow machines (Jay, 1948).

Mountain obstacle course

A mountain obstacle course, which contained all elements of a normal obstacle course in addition to advanced elements of mountain engineering, was constructed at Camp Hale, and became a model for future army training (Jay 73).



Figure 300. The mountain obstacle course at Camp Hale (Jay, 1948, p 66).



Figure 301. Troopers going through the mountain obstacle course (Jay, 1948, p 67).

Climbing

Many aids were developed for training in the Mountain Training Center. “At Fort Lewis, Captain Woodward ordered the construction of three 30-foot high wooden walls in an old sand and gravel pit near the stables. Hand and footholds were notched in the logs, and the men were taught the use of ropes, pitons, and repelling” (Jay 26). At Camp Hale, Colorado, engineers constructed an artificial glacier to aid in the training of ice climbing (Jay 73). Eventually, officers and personnel from the MTC became invaluable, as they taught mountaineering skills like rock climbing to troops in West Virginia, and across the globe (Jay 75-84).

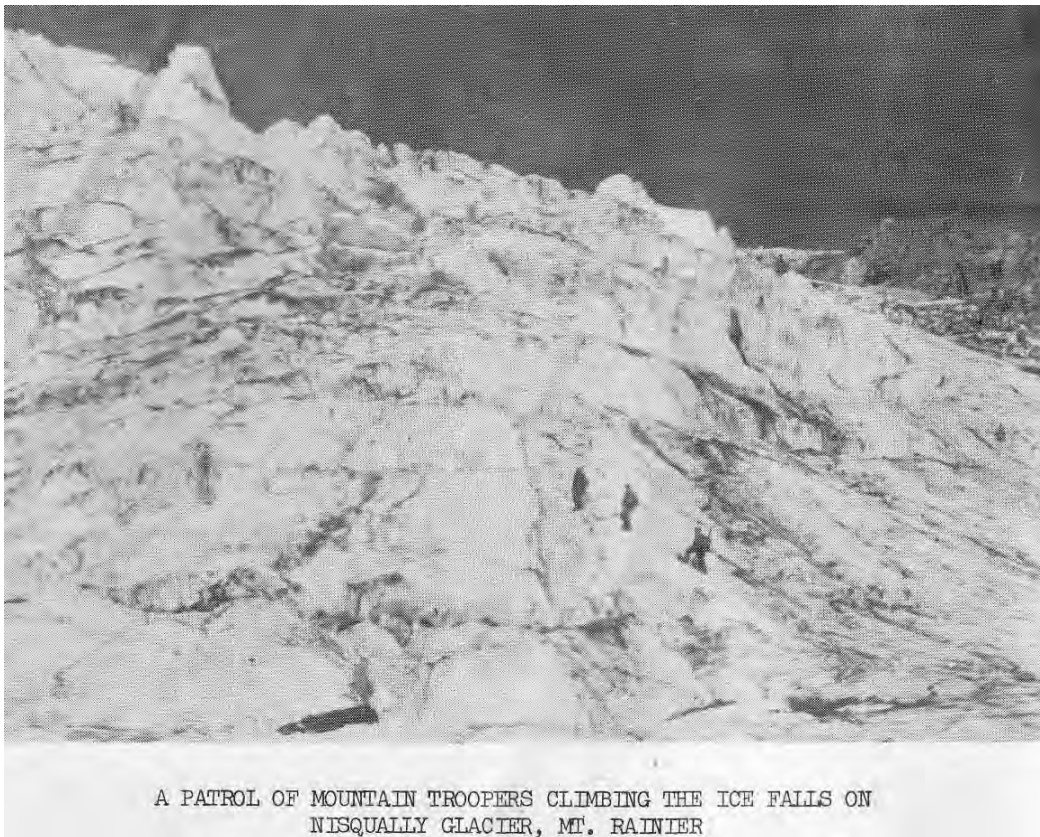


Figure 302. A patrol of mountain troopers climbing the ice falls on Nisqually Glacier, Mt. Rainier (Jay, 1948, p 68).



Figure 303. Practice climbing course held in an old gravel pit, Fort Lewis. A wooden climbing wall is at the right, summer 1942 (Jay, 1948, p 24).



Figure 304. Mountain troopers using relaying ropes on the climbing wall, August 1942 (Jay, 1948, p 25).



Figure 305. The rock climbing school at camp hale taught the fundamentals of mountaineering (Jay, 1948, p 65).

Maneuvers/operations

“The battalion maneuvers of the 87th Infantry in February 1943 were a miserable failure” (Govan 4-9). Maneuvers and tactics were always difficult to complete due to weather and terrain challenges, and the lack of uniformity of circumstances in which a real operation might take place (Jay 63-74, 85-86).



MOUNTAIN TROOPERS PRACTICING SKI MANEUVERS NEAR FORT LEWIS



Figure 306. Mountain troopers practice ski maneuvers on Mt. Rainier, Near Fort Lewis, April 1942 (Jay, 1948, p 69).

Dog training

Dogs also were trained to be sled and sentry dogs, and men and dogs were trained to work together as messengers (Jay 63-74, 85-86).



Figure 307. Experimenting with dog teams at Camp Hale. The use of sled dogs for military operations proved unadvisable (Jay, 1948, p 72).



Figure 308. An "attack dog" lunging at the padded arm of his instructor (Jay, 1948, p 71).



Figure 309. Putting a message on the collar of a messenger dog. Camp Hale (Jay, 1948, p 71).

Survival training

In January 1943, MTC Headquarters issued a directive for winter and mountain training that included training in preparation of rations, using

various types of tents, trail hygiene, avalanche precautions, and marching technique (Ray 63-74, 85-86).



Figure 310. Mountain troops drilling in the cleared area in front of paradise lodge, which was their barracks on Mt. Rainier from February to June 1942 (Jay, 1948, p 14).



Figure 311. Mountain troops on overnight bivouac, Camp Hale, Winter 1943 (Jay, 1948, p 20).



Figure 312. Colonel Rolfe tried out the one-man tent, ski, sectional, at Mt. Rainier, April 1942 (Jay, 1948).

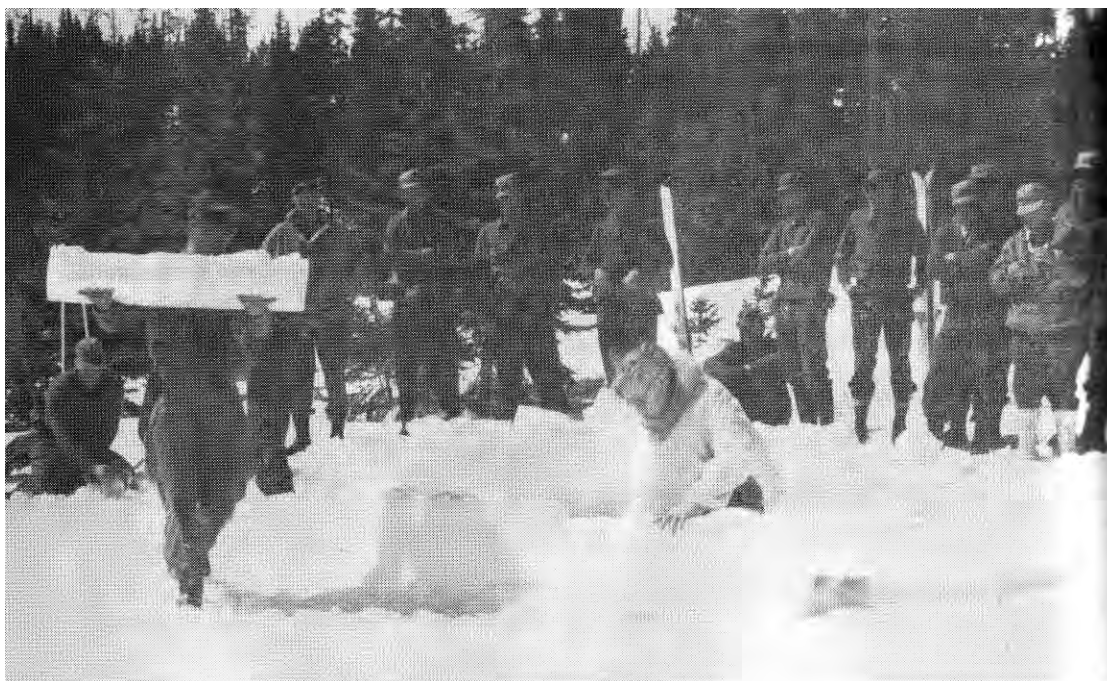


Figure 313. Dr. Vilejalmur Stefansson demonstrating the correct way of building an igloo at Camp Hale (Jay, 1948, p 110).

Marine Corps Mountain Warfare Training Center, Pickel Mountain

“The Marine Corps Mountain Warfare Training Center (MCMWTC) is one of the Corps' most remote and isolated posts. The center was established in 1951 as a Cold Weather Battalion for providing cold weather training for replacement personnel bound for Korea. After the Korean Conflict, the name was changed to the Marine Corps Cold Weather Training Center. In 1963, the center was renamed to its present name. MCMWTC operated on a full-time basis until 1967, when it was placed on a caretaker status, as a result of the Vietnam War. The training center was reactivated as a full-time command 19 May 1976.

The center is located on California Highway 108 at Pickel Meadows, 21 miles northwest of Bridgeport, CA, and 17 miles south of Walker, CA. The approximately 46,000 acres are under the management of the U.S Forest Service in the Toniyaabe National Forest. A letter of agreement between the forest service and the Marine Corps permits use of the area for training Marines in mountain and cold weather operations. Formal schools for individuals and battalions are offered in summer and winter operations. The training emphasizes both individual and unit mountain skills and overall combat capability. Marines at the center also test cold weather clothing

and equipment, and develop doctrine and concepts for enhancing the Corps' ability to perform in harsh environments" ("Mountain Warfare").



Figure 314. Crossing a creek on a rope bridge during snow fox at Pickel Meadows Marine Corps Cold Weather Training Center, CA, 29 January 1960 (NARA College Park, RG 127-GG-590, box 24, photo A368056).



Figure 315. Rifleman with crossed ski poles for rifle support during operations at Pickel Meadows Marine Corps Cold Weather Training Center, CA, 29 January 1960 (NARA College Park, RG 127-GG-590, box 24, photo A368049).



Figure 316. Marines on maneuvers at Pickel Meadows Marine Corps Cold Weather Training Center, CA, 4 December 1972 (NARA College Park, RG 127-GG-586, box 24, photo A374544).



Figure 317. Using rope bridge for crossing creek during Snow Fex operation at Pickel Meadows Marine Corps Cold Weather Training Center, CA, 29 January 1960 (NARA College Park, RG 127-GG-590, box 24, photo A368045).



Figure 318. Rappelling on the cliffs at Pickel Meadows Marine Corps Cold Weather Training Center, CA, 24 June 1975 (NARA College Park, RG 127-GG-595, box 24, photo A374754).



Figure 319. Marines traveled on skis during a training exercise at Pisgah National Forest, NC, February 1977 (NARA College Park, RG 127-GG-586, box 24, photo A454243).

Cold Weather Marine Training at Camp Drum



Figure 320. Marines try out the M-16 during cold weather training at Camp Drum, NY, 2 March 1973 (NARA College Park, RG 127-GG-586, box 24, photo A343350).



Figure 321. An M-60 gunner signals that he is ready to fire during live firing exercises while on cold weather training at Camp Drum, NY, 2 March 1973 (NARA College Park, RG 127-GG-586, box 24, photo A343349).



Figure 322. A Marine uses a yukon stove to heat chow and warm bodies during training at Snow Fex at Camp Drum, NY, no date (NARA College Park, RG 127-GC-590, box 24, photo A451002).



Figure 323. Marines experimenting with the snowmobile for possible use on the snow bound battlefield during cold weather exercises at Fort Drum, NY, January 1978 (NARA College Park, RG 127-GG-589, box 24, photo A454357).

3 Evaluating Properties Under the Military Training Lands Historic Context

Cultural resources are identified and managed within the Department of Defense (DoD) in accordance with Federal laws and military regulations. The identification of historically significant properties and resources can be achieved only through evaluation of their position within the larger historic context. According to the NRHP, historic contexts are defined as “... the patterns, themes, or trends in history by which a specific occurrence, property, or site is understood and its meaning (and ultimately its significance) within prehistory or history is made clear” (NRB #15, 7). A historic property is determined to be significant or not significant based on the application of standardized National Register Criteria within the property’s historical context.

Criteria for evaluation

The NRHP Criteria for Evaluation (36 CFR Part 60.4) describe how properties and districts are significant for their association with important events or persons (Criterion A and Criterion B), for their importance in design or construction (Criterion C), or for their information potential (Criterion D). The following is a brief description of each of the four NRHP Criteria for Evaluation (excerpted from National Register Bulletin #15: How to Apply the National Register Criteria for Evaluation):

- A. Event**—associated with events that have made a significant contribution to the broad patterns of our history; or
- B. Person**—associated with the lives of persons significant in our past; or
- C. Design/Construction**—embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represents a significant and distinguishable entity whose components may lack individual distinction; or
- D. Information Potential**—yielded, or is likely to yield, information important in prehistory or history.

Criterion consideration G

Generally, buildings, structures, landscapes, etc. constructed within the last 50 years are not eligible for the National Register unless they can be

classified as exceptionally important under Criterion Consideration G in the National Register Bulletin #15. “The National Register Criteria for Evaluation excludes properties that achieved significance within the past 50 years unless they are of exceptional importance. Fifty years is a general estimate of the time needed to develop historical perspective and to evaluate significance. This consideration guards against the listing of properties of passing contemporary interest and ensures that the National Register is a list of truly historic places.”

Although the National Register Criteria do not explicitly define the term exceptional importance, National Register Consideration G and the National Register Bulletin #22: *Guidelines for Evaluating and Nominating Properties that have Achieved Significance within the Past Fifty Years* offers guidance for identifying and evaluating properties that have achieved significance in the past 50 years. Both of these sources stress that, for such properties, sufficient historical perspective must exist to make justifiable determinations of exceptional importance. Proof that sufficient historical perspective exists usually comes in the form of scholarly research and other sources of historical evidence associated with a particular historic context. The significance of Cold War era properties may lie at the national level in association with military themes directly tied to the Cold War, or at the state or local level under other themes.

The Army and Air Force have all issued interim guidelines for managing Cold War resources. The Navy is still working on draft version of guidance. These guidelines are not meant to replace the NHPA and its implementing regulations (Sections 106 and 110). The intent of the guidance is to set up an initial framework for the inventory and evaluation of the Cold War historic properties.

Army cold war guidelines and contexts

The Army developed its “interim Policy for Cold War Era Properties” in 1995. Applying to Army, Army National Guard, and Army Reserve installations, this policy stated that in applying the criteria of exceptional importance, the Army would “focus on the production and combat subsystems of the Army and their associated Real Property and technology that is of unmistakable and extraordinary importance by virtue of a direct and influential relationship to Cold War tactics, strategy, and events” (Department of the Army Cultural Resources Interim Policy Statements, 1995).

The Interim Policy was set into guidance with *The Thematic Study and Guidelines: Identification and Evaluation of U.S. Army Cold War Era Military-Industrial Historic Properties* in 1997. This guidance is a thematic study on historic properties associated with the military-industrial theme of the Cold War and provides guidelines for the identification and evaluation of Cold War era military-industrial historic properties in the Army. The context focuses in on what the Army did in direct response to the Cold War and directly associated with a major Army mission.

The Cold War context states that only “properties that are directly related to the Cold War military-industrial context” are exceptionally important. They must meet “any or all” of the following conditions:

1. They were specifically constructed or used prior to 1989 to:
 - a. Meet the perceived Soviet/communist military threat;
 - b. Project a force designed to influence Soviet policy; and
 - c. Affect global opinion of the relationship between the superpowers.
2. Through the architectural or engineering design, they clearly reflect one of the Cold War themes:
 - a. Basic Scientific Research (Laboratories)
 - b. Materiel Development (Research, Development, Engineering Centers, and Proving Grounds)
 - c. Wholesale Logistical Operations (Ammunition Production Facilities)
 - d. Air Defense, Ballistic Missile Defense, and Army Missiles
 - e. Command and Control, Communications, Computer, and Intelligence
 - f. Army School System
 - g. Operational Forces
 - h. Army Medical Activities
 - i. Miscellaneous (Nuclear and Aviation).
3. They are directly related to the United States/Soviet relationship through association with a milestone event of the period.
4. They are directly related to the United States/Soviet relationship through association with the life of a person during the Cold War period.

Air Force cold war guidelines and context

The U.S. Air Force recognizes five property type groups in the Interim Guidance that may convey important aspects of the Cold War. These five properties include:

1. Operational and Support Installations
 - a. Air Force bases, including Command Centers

- b. Missile Stations
- c. Launch Complexes
- 2. Combat Weapons Systems and Combat Support Systems
 - a. Missiles
 - b. Aircraft (Fixed Wing and Rotary)
 - c. Ground Vehicles and Equipment
- 3. Training Facilities
 - a. Warfighting, Combat Support, and Intelligence Schools
 - b. Launch Complexes
 - c. Combat Training Ranges
 - d. Impact Areas; Targets
 - e. POW (Prisoner of War) Training Camps
- 4. Materiel Development Facilities
 - a. Research Laboratories
 - b. Manufacturing Sites
 - c. Test Sites
 - d. Proving Grounds
- 5. Intelligence Facilities
 - a. Radar Sites
 - b. Listening Posts.

Significance

Military training ranges need to be researched and evaluated as a whole landscape, including all the buildings/structures, firing lines, target mechanisms, etc. and not evaluated as individual elements that sit on the range. Military training ranges were originally designed and intended to be utilized as a whole complex. Each structure/element provides a vital role in the functioning of the range and the overall effectiveness of the training procedures for the soldiers.

The overall importance of particular ranges depends on the mission of whichever installation the research is focusing on. The mission critical ranges are what is important and need to be evaluated as a historic district. For example, a large arms range like a tank range needs to be examined and evaluated from the parking lot all the way out to the target butt, regardless of individual building or range element construction date. Thus just looking at an individual observation tower, latrine, firing targets, etc. should not be done. Look at the entire range. But go one step further and look at all of the ranges and training lands on the installation as one large group to see if there is even information for a large district. No individual building/structure/element will ever be individually significant.

Once the training range is inventoried and evaluated as a complex, the next step is to determine if a particular range/buildings are significant to the individual installation being researched. For example, all ranges at Fort Jackson, SC could possibly be evaluated as one large district because Fort Jackson is the home of basic training; whereas the tank ranges located at Fort Knox, KY would be important to the mission because Fort Knox was the home of the Armor division. Ultimately, the researcher needs to look at the overall mission of the installation before deciding what is important on the ranges.

For instance, a large arms range, like the field artillery range, may have been constructed in 1944 but may contain buildings and structures from the entire stretch of the Cold War. As individual building elements and training mechanisms wore out they typically were replaced with new materials and technologies. The ranges will always be ranges and used for training, therefore, continue use of the landscape and structures are important. It is important to evaluate the location of replacement elements. Is the newer observation tower in the same location as the original? Are the replacement latrines, bleachers, and storage buildings located in the same spot on the range landscape?

Properties considered under the Large Arms Range Context are training ranges that the War Department, Navy Department, and Department of Defense constructed for their personnel and are associated with one of the following military training periods:

- Pre-Civil War (up to 1861)
- Civil War (1861-1865)
- National Expansion (1865-1916)
- World War I (1917-1920)
- Interwar (1921-1940)
- World War II (1941-1945)
- Early Cold War (1946-1955)
- Late Cold War (1956-1989).

The researcher still has to be able to identify that firing range to what period it is significant for no matter if there are replacement structures or elements located on the range.

Aspects of integrity

In addition to possessing historical significance, training ranges must also retain sufficient physical integrity of the features that convey their significance to be eligible to the NRHP (NRB #15, 44).

Training lands/ranges will either retain integrity (that is, convey their significance) or they will not. Within the concept of integrity, the National Register criteria recognize seven aspects or qualities that, in various combinations, define integrity.

To retain historic integrity a property will always possess several, and usually most, of the aspects. The retention of specific aspects of integrity is paramount for training lands/ranges to convey their significance. Determining which of these aspects are most important to a particular training land/range requires knowing which association is significant.

Although some training lands/ranges may not meet integrity standards for individual eligibility to the National Register, they may meet a standard as a contributing resource to a larger training district. Training lands/ranges are considered to be significant if they possess a majority of the following Seven Aspects of Integrity (NRB #15, 44-45):

1. **Location.** Location is the place where the historic property was constructed or the place where the historic event occurred.
2. **Design.** Design is the combination of elements that create the form, plan, space, structure, and style of a property. It results from conscious decisions made during the original conception and planning of a property (or its significant alteration) and applies to activities as diverse as community planning, engineering, architecture, and landscape architecture. Design includes such elements as organization of space, proportion, scale, technology, ornamentation, and materials.
3. **Setting.** Setting is the physical environment of a historic property. Setting refers to the character of the place in which the property played its historical role. It involves how, not just where, the property is situated and its relationship to surrounding features and open space.
4. **Materials.** Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.
5. **Workmanship.** Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.

6. **Feeling.** Feeling is a property's expression of the aesthetic or historic sense of a particular time period.
7. **Association.** Association is the direct link between an important historic event or person and a historic property.

Character defining features

The character defining features of a range depend on the associated NRHP Criteria and the associated property type. A large arms range typically was designed and constructed with the following:

- a set of cleared and leveled firing points laid out on a firing line and associated features (foxholes, trenches, sandbags, embankments, etc)
- stationary or moving targets (cables, pulleys, tracks, pop-up targets, miniature airplanes, etc)
- embankments or walls (built up behind targets to catch ammunition, in front of targets for concealment and protection, at firing lines for firing support, between ranges to protect from adjacent fire)
- buildings (control or observation tower, bleachers, latrines, target storage houses, ammunition storage buildings)
- typical features include multiple range layouts, firing lines, targets, embankments/trenches, and buildings.

Context example photographs

Two members of the research team conducted a site visit to Fort Bragg, NC. Fort Bragg was chosen for the site visit because it had one of the largest groupings of different training lands in the Department of Defense; the complexity of its training lands; and the level of historical background that Fort Bragg had on its training lands. There are few examples gathered from other installations. In addition to the photographs taken at Fort Bragg, the researchers searched the previous ERDC/CERL pertaining to training lands and used some of these for examples in the evaluation chapter.

When the researcher is tasked to research and inventory items on a military training range, the researcher is going to find things that are on the real property list, items that are not listed on the real property list, abandoned structures, and foundations. It is the task of the researcher to inventory and document all elements of the range, the role of the elements and the condition of the elements.

Below are photographic representations of a variety of examples of training villages, mock sites, and large scale operation area elements. The examples should be used as a guide to help identify key character defining features which will ultimately help determine the integrity of each range.

Vietnamese training village



Figure 325. Remains of Vietnamese training village (center of village), Fort Gordon, January 2004.



Figure 324. Remains of Vietnamese training village (hut), Fort Gordon, January 2004.



Figure 325. Remains of Vietnamese training village (entrance gate), Fort Gordon, January 2004.



Figure 326. Remains of Vietnamese training village (entrance to tunnels), Fort Gordon, January 2004.



Figure 327. Remains of Vietnamese training village (torture pit), Fort Gordon, January 2004.

Military operations in urban terrain (MOUT)



Figure 328. MOUT Area, Fort Bragg, NC, 17 May 2006.



Figure 329. MOUT Area, Fort Bragg, NC, 17 May 2006.



Figure 330. MOUT Area, Iraqi adaptation, Fort Bragg, NC, 17 May 2006.



Figure 331. MOUT Area, Korean signage, Fort Bragg, NC, 17 May 2006.



Figure 332. MOUT Area, Fort Bragg, NC, 17 May 2006.



Figure 333. MOUT Area, Fort Bragg, NC, 17 May 2006.

Parachute jump tower



Figure 334.
Parachute jump
tower, Fort Bragg,
NC, 18 May 2006.



Figure 335.
Parachute jump
tower, Fort Bragg,
NC, 18 May 2006.

Parachute landing areas



Figure 336.
Parachute landing
area, Fort Bragg, NC,
17 May 2006.



Figure 337.
Parachute landing
area, Fort Bragg, NC,
17 May 2006.



Figure 338.
Parachute landing
area, Fort Bragg, NC,
17 May 2006.



Figure 339.
Parachute landing
area, Fort Bragg, NC,
17 May 2006.



Figure 340.
Parachute landing
area, Fort Bragg, NC,
17 May 2006.



Figure 341.
Parachute landing
area, Fort Bragg, NC,
17 May 2006.



Figure 342.
Parachute landing
area, Fort Bragg, NC,
18 May 2006.



Figure 343.
Parachute landing
area, Fort Bragg, NC,
18 May 2006.



Figure 344.
Parachute landing
area, Fort Bragg, NC,
18 May 2006.

4 Conclusions

This work developed a historic context for the development of military training lands used by the DOD and its forerunners. This overall project covered five types of military training:

1. Small arms ranges
2. Large arms ranges
3. Training villages and sites
4. Bivouac areas
5. Large-scale operation areas.

This document provides an historic context of training village, mock sites, and large scale operations areas on military training lands for the U.S. Army, U.S. Navy, U.S. Army Air Corps/U.S. Air Force, and the U.S. Marines, with a focus on the landscape outside the developed core of military installations. This work concludes that military training lands are significant enough in our nation's history to be surveyed for eligibility to the NRHP. However, training lands must be viewed as a whole; individual buildings on a training range are rarely eligible for the NRHP; buildings in their larger context (and the integrity of that larger context) are important.

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