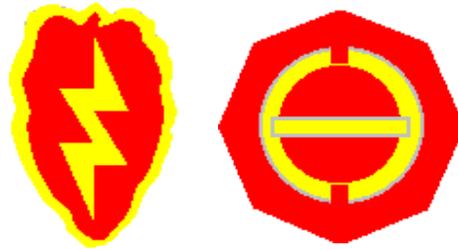


Supplemental Environmental Assessment



for

Routine Training at Makua Military Reservation and PFC Pilila'au Range Complex Hawaii

May 2001

Prepared by:
The Onyx Group, San Diego
in association with Greenhorne & O'Mara Inc
Greenbelt, Maryland

for
G3 Range Division
25th Infantry Division (Light)
and US Army-Hawaii

under the direction of the
Force XXI/Army Force Modernization Program Office
US Army Engineering and Support Center, Huntsville
under Contract GS-35F-5185H

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Executive Summary

Makua Military Reservation The United States Army and other elements of US military forces have been using the Makua Valley on Oahu's Waianae Coast since before World War II, and the Army has had responsibility for the reservation since 1943. The Army currently controls approximately 4,190 acres in the valley and calls the property Makua Military Reservation (MMR). The Company Combined-arms Assault Course (CCAAC) is the single training facility at Makua, and has been in place there since 1988. The principal Army user is the 25th Infantry Division (Light), which is headquartered at Schofield Barracks, but the Marine Corps, Coast Guard, Air Force, the Army Reserve, and Hawaii Army National Guard all use the site. Combined-arms Live Fire Exercises (CALFEX) conducted on the CCAAC are a key element in the program of training for light infantry units and the Makua CCAAC is the only facility of its type in the state.

Environmental issues The reservation is known to contain habitat of numerous endangered species, and is of considerable cultural significance to the native Hawaiian community. As a result of fires in September 1998, the Army voluntarily suspended all training at Makua. It initiated an extensive investigation of potential impacts from wildland fires, as well as consultation with the US Fish and Wildlife Service, to develop ways to reduce environmental impacts of training activities.

The new investigations and consultations added to a substantial ongoing environmental program, elements of which include:

- An extensively researched and coordinated Programmatic Agreement with the State Historic Preservation Office, to ensure that cultural resource sites at Makua are protected. The agreement defines specific procedures, actions and techniques the Army will employ for protecting the sites.
- A Wildland Fire Management Program using remote weather sensing devices and sophisticated modeling of fire-conducive conditions to help prevent fires, which have been the greatest threat to endangered species at Makua. This plan has been coordinated among and approved by all interested agencies, and details specific procedures for both preventing fires and for suppressing fires, which occur.
- Extensive consultation with the US Fish and Wildlife Service to ensure that Army practices and procedures are not likely to jeopardize the continued existence of endangered species.
- Integrated Training Area Management, an Army-wide program adapted to Makua, that includes, in addition to sophisticated measurement and evaluation systems, a program of environmental awareness for Army users of the site.
- An extensive program of public involvement, including community forums and meetings, civic programs, and support to neighborhood schools and Scouting.

Proposed Action The Army would continue using the CCAAC at Makua Military Reservation to conduct company combined-arms live fire exercises, but would reduce use from its full capacity. In particular, the CALFEXs would not include use of TOW missiles, incendiary munitions, or tracers, which historically caused the greatest number of fires. All current environmental programs would continue, including natural and cultural resource management, wildland fire management, public involvement, and other programs as described in Sections 4 and 5 of this Supplemental Environmental Assessment. This action will allow the Army to execute its required training missions.

Alternatives to the Proposed Action Makua is the only training area in Hawaii where units of company size (about 150 persons) can maneuver and fire live munitions concurrently. The only other site on Oahu where the Army can conduct similar training is at Schofield Barracks, but the facility there will only accommodate units of up to platoon size (about 50 persons maximum). A larger facility to accommodate company maneuver CALFEXs cannot be constructed at Schofield Barracks without reconfiguring and rebuilding current ranges elsewhere and severely impacting the Division's readiness and training, including individual weapons qualifications as well as company maneuver CALFEXs. Additionally, a suitable facility cannot be constructed at Pohakuloa Training Area on the Island of Hawaii without adverse impacts on the Division's readiness, increases in personnel deployment time and operational expenses, as well as substantial procurement and construction costs, and a lengthy delay that will result. There were no reasonable alternatives to the proposed action.

Impacts if the Proposed Action is not implemented Without the maneuver CALFEX training, the Division's soldiers at company level will not be trained in maneuvering against an enemy using live fire. The Infantry Company will not be trained in using fire support while maneuvering and integrating other combat assets (such as artillery). Without this training these skills, if they already exist, will erode or never be developed. These are critical skills these soldiers need to perform their missions in combat. If they first learn how to perform these tasks against a real enemy, the result may be an increased probability of mission failure.

Impacts of implementation This Supplemental Environmental Assessment has evaluated all available data concerning the effects of the Proposed Action on land use, soils and geology, vegetation and wildlife, air quality, and the noise environment, transportation, and socioeconomics, and environmental justice and cumulative impacts. In no case were the impacts of the company-level maneuver CALFEX found to be significant. The US Fish and Wildlife Service found that the Army's proposed use of the CCAAC at Makua is not likely to jeopardize the continued existence of endangered species or critical habitat. The Hawaii State Historic Preservation Officer and the Advisory Council for Historic Preservation found that the 25th Infantry Division (Light) met its Section 106 (National Historic Preservation Act) responsibilities by entering into a Programmatic Agreement. Ammunition used in training at Makua poses no risk to the civilian communities through which it is transported, and the volume of military traffic is so low as to be inconsequential. For public safety reasons, the Waianae community will not have unrestricted access to cultural resource sites at Makua Military Reservation, but this concern will be offset to some extent by the Army's community involvement program.

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Section 1: Purpose and need for the Proposed Action

1.1 INTRODUCTION Makua Military Reservation is 38 miles northwest of Honolulu on the western shore of Oahu near Kaena Point, and situated in Makua-Kahanahāiki valleys. It is bordered to the west by the Pacific Ocean, and surrounded by the Waianae Mountains to the north, east, and south. Makua borders Farrington Highway (SR 93) and extends west from the Waianae Range ridgeline to the Pacific Ocean. It is approximately 3 miles north of Makaha, the nearest town.

Makua has been under US Army jurisdiction for use as a training area since May 1943. In May 1988, the Army constructed a Company Combined-arms Assault Course (CCAAC), and actively used it for the next 10 years. In September 1998, several wildland fires were started by munitions that fell outside of designated impact areas. In order to investigate the fires, and to evaluate its training and fire management procedures, the Army voluntarily suspended all training at Makua. (Please note that “Makua” is used throughout this document to mean “Makua Military Reservation.”) No species listed as threatened or endangered under the 1973 Endangered Species Act (16 USC 1531-1544,) perished.

Upon suspension of training at Makua, the Army began an extensive investigation into potential environmental impacts from wildland fires, and re-evaluated its fire management plan and training procedures. The Army also initiated formal Section 7 consultation with the US Fish and Wildlife Service (USFWS) to identify and evaluate impacts on threatened and endangered species, and to develop ways to reduce environmental impacts.

In 1985, the Army prepared an Environmental Assessment/Finding of No Significant Impact (EA/FNSI) for the CCAAC at Makua, which is included as Appendix D. At that time, there was no formal range on which to conduct company-level maneuver live-fire training in a safe and realistic combat environment. The 1985 EA addressed the current and future need for soldiers to train in the successful detection, recognition, and engagement of enemy targets. The proposed action evaluated in the Environmental Assessment was to correct this deficiency with the construction of a formal live-fire range at Makua to support company-size units utilizing all their available weapon systems and tactics (US Army, 1985).

Since 1985, the Army has learned a great deal of new information about the environment at Makua, including, but not limited to, endangered species and cultural resources. The Army has modified the action proposed in the 1985 document in ways that are relevant to environmental concerns. Therefore, the Army has decided that, in addition to conducting Section 7 consultation with the USFWS under the Endangered Species Act (ESA), it will update previous environmental documentation. Army Regulation (AR) 200-2, *Environmental Effects of Army Actions*, requires that commanders of Army installations and activities ensure that all major actions fully comply with the National Environmental Policy Act (NEPA) of 1969 (42 USC §4321-4347). In accordance with the implementing guidelines for Section 106 of the National Historic Preservation Act, 36 CFR, Part 800, the effects of the Army training on cultural resources have been evaluated as well. In light of the above, the Army has prepared this Supplemental Environmental Assessment to the original 1985 Environmental Assessment.

This Supplemental Environmental Assessment (SEA) analyzes and evaluates the impact of resumption of training on the natural, social, and cultural environment of Makua and the surrounding property. This document has been prepared in accordance with NEPA and AR 200-2. The Proposed Action described in this SEA reflects changes in the way the Army trains to minimize environmental impact, and takes into account the new information about the affected environment.

1.2 MISSION OF THE ARMY AND THE 25TH INFANTRY DIVISION (LIGHT) The purpose of the nation's military is to defend the Constitution by providing the ability to fight and win wars. The 25th Infantry Division's home station in Hawaii, near the center of the Pacific theater, is also the western-most and southern-most position in the United States at which large Army forces can be stationed. The Army is a land-based force, and in the 25th Division, light infantry units are the key component that makes up that force.

The mission of the 25th Infantry Division (Light) (25th ID [L]) is to prepare for deployment to a theater of operations to perform combat operations. When ordered to do so, the 25th ID(L) conducts theater-wide deployment, within 54 hours of notification, to perform combat operations in support of United States Commander-in-Chief Pacific theater strategy.

1.3 TRAINING In order to meet their national defense requirement and maintain combat readiness as a deterrent to potential enemies, Army forces stationed in Hawaii need to conduct realistic training. This training takes many forms: from informal one-on-one sessions through classroom sessions; firing weapons towards targets on defined ranges; maneuvers with blank ammunition or laser simulators; and maneuver training with live fire of weapons, up to and including Combined-arms Live Fire Exercises (CALFEX). AR 385-63, *Policies and Procedures for Firing Ammunition for Training, Target Practice, and Combat*, defines a CALFEX as "a combat exercise in which the Army/Marine Corps combined-arms

teams in combat formation conduct coordinated combat firing and maneuver practice in executing the assault, seizure, and defense of appropriate objectives. Tactical air support may be included.” (US Army, 1983) The commanding general, 25 ID(L) and USARHAW defines a company CALFEX as follows:

A company level combined-arms maneuver live fire designed to train companies to integrate and synchronize two or more ground maneuver elements, with all organic weapons, task organized engineers, and indirect fire assets from both battalion and direct support artillery. The exercise may include other combat, combat support, and combat service support assets not organic to the company.

The task given to infantry companies is to conduct a CALFEX annually. An example of the simulated combat conditions might include a situation where the company is operating separately and has been ordered to attack to seize an objective. To add realism the commander is told that the enemy has been in position for 24 hours and has prepared positions with mines and wire. Further, both friendly and enemy forces have indirect-fire capabilities. The company is given enough time to plan and rehearse its operations. As the force provider, the battalion commander would allocate the company commander the following to ensure he has the combat power to accomplish the assigned mission:

- An Infantry Rifle Company, with organic weapon systems (M16A2/M4 rifles; M203 grenade launcher; M249 and M240B machine guns; 60mm mortars, antitank weapons [using only Multiple Integrated Laser Engagement System only], hand grenades, demolitions)
- Two or more subordinate ground maneuver platoons (Light)
- Battalion level assets (81-mm mortar platoon)
- Engineer squad
- Direct Support field artillery (M119 howitzers - 105mm)

If available, the battalion commander may also provide the following assets based on scenario development:

- Battalion TOW section (TOW [no live fire at Makua] or MK19 or .50 caliber machine gun)
- General Support field artillery (no M198 155-mm at Makua)
- Attack aviation
- Lift aviation
- Scout sniper teams
- Air defense artillery stinger Team (no live fire at Makua)
- Smoke or chemical decontamination sections

To meet these standards the company commander will plan, rehearse and execute a maneuver combined-arms live fire, employing all organic and supporting elements to complete the following tasks:

- The company commander receives, plans, and issues the Operations Order, including a scheme of maneuver that exploits enemy flanks, gaps and weaknesses.
- The company reacts to contact.
- The commander employs fire support by echeloning fires to prepare the objective for assault.
- The company continues movement to the assault or support position.
- The company conducts the assault.

- The company performs Consolidation and Reorganization.
- The company performs Casualty Evacuation Operations.

Live-fire maneuver training, with groups of soldiers moving across a section of land as they fire live ammunition at targets that appear unexpectedly, is the closest possible simulation of actual combat conditions achievable in a training environment. Experience has shown that the more closely training exercises simulate actual combat conditions, the better the Army performs when engaged in combat. Better performance in this sense can mean quicker attainment of national objectives with minimal loss of life—the Persian Gulf War and operations in Panama are recent examples of high quality training resulting in quick, low-casualty combat operations.

The Army’s combat organizational structure begins with the individual soldier and progresses through the squad (5-10 soldiers), platoon (20-50), company (100-200), battalion (500-800) and upward to brigade, division, and higher. The Army training doctrine requires units at all levels train as it fights in order to meet its mission requirements. This necessitates combined-arms live-fire training.

Company level combined-arms maneuver live fire training is a key element in developing the larger fighting force, as well as developing leaders with the experience to lead soldiers as they progress to higher levels of command. As the level of training progresses from individual qualifications on weapons through squad and platoon level maneuver and live fire, the degree of complexity increases. At the platoon or squad level, infantrymen are mainly engaging (*i.e.*, firing their rifles at) targets they can see directly. In company-level training, company commanders must ensure that squads coordinate their actions and maneuvers with platoons, and platoons with the company. In combined-arms live fire maneuver training, the company commander must also coordinate these actions with external combat and combat support arms (artillery, engineer, or aviation elements), all while under the stress of near-battlefield conditions both day and night. Within the Army combat structure, the company is the first organizational level where such complex integrated activity occurs.

If company commanders do not receive the necessary combined-arms maneuver live-fire experience, their ability to function effectively at higher levels (such as battalion commander) is significantly diminished. Most importantly, when commanders, non-commissioned officers, and individual soldiers do not receive this type of training, the risk of mission failure and casualties for the unit is substantially increased.

1.3.1 Training lands in Hawaii Live-fire maneuver training requires large land areas for at least two reasons: first, to provide a safety buffer; and second, because modern land warfare involves rapid movement across large areas. The largest training area available to Army units stationed in Hawaii is Pohakuloa Training Area (PTA) on the Island of Hawaii. PTA includes almost 109,000 acres. Because of safety requirements to maintain an adequate buffer from adjacent activities and the harshness of the terrain, only about 19,356 acres can actually be used for live-fire training, and only 80 acres can actually be used for live fire maneuver training.

Table 1-1 provides a summary of training lands available to Army forces stationed in Hawaii, and shows that the largest contiguous parcel available is the 19,356 acres at PTA. “Untrafficable” lands are those too steep or too deeply forested to simulate wartime conditions, or are lands set aside to protect environmental features such as threatened or endangered species habitat. “Impact areas”, lands into which

weapons are fired, are also considered untrafficable, due to the safety hazard caused by unexploded ordnance (UXO). Figure 1-1 shows all Army training lands in Hawaii (see 1.5.1).

**Table 1-1:
Available training land in Hawaii (in acres)**

<i>Reservation</i>	<i>Island</i>	<i>Impact area</i>	<i>Ranges</i>	<i>Untrafficable maneuver land</i>	<i>Trafficable maneuver land</i>
Schofield Barracks	Oahu	2,780	1,506	4,322	1,235
East Range	Oahu	0	0	2,842	2,223
Kawailoa Training Area	Oahu	0	0	18,038	5,310
Kahuku Training Area	Oahu	0	0	4,840	4,569
Dillingham Airfield	Oahu	0	0	203	354
Makua Military Reservation*	Oahu		457 (CCAAC)	1,212	1,034
Pohakuloa Training Area	Hawaii	51,000	357	37,513	19,356
Required Range Use	Hawaii		208		(208)
Total Use Acres	Hawaii	51,000	565	37,513	19,148
	USARHAW total area	55,724	2,381	68,970	33,563

* Site of the Proposed Action

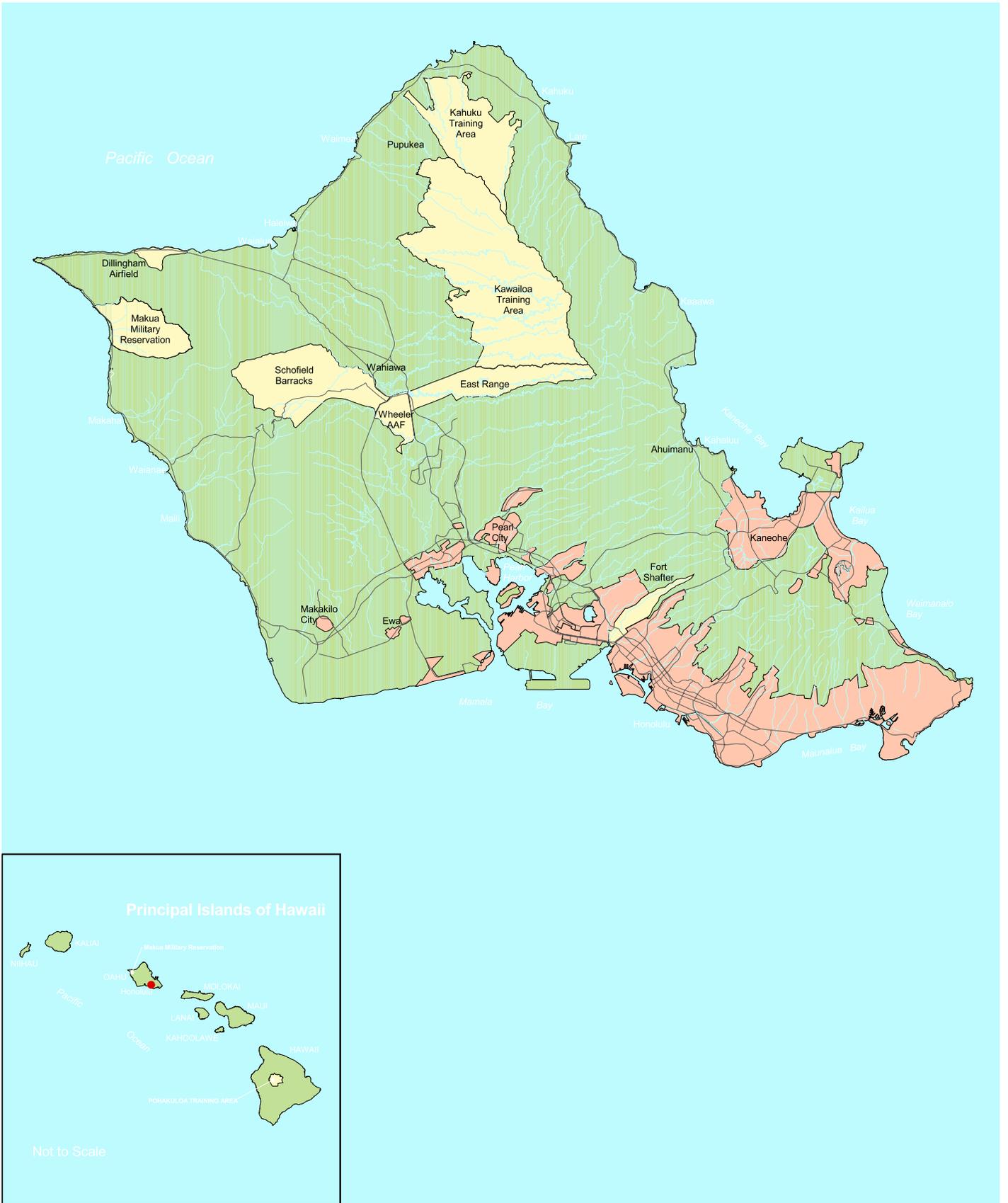
Source: *Land Use Requirements Study, 1997*

To further clarify the training area challenge for the 25 ID(L), Tables 1-2 and 1-3 offer a comparison between the Army requirements for training land and the actual availability of land in Hawaii. Table 1-2 defines the training area dimensions required in accordance with Department of the Army Training Circular 25-8, “Training Ranges,” for each echelon of training unit in order to adequately perform the required maneuver live fire tasks to the Army standard (Department of the Army, 1992). Table 1-3 identifies the maneuver live fire training areas available to infantry units in Hawaii. Training exercises to be performed at the Pilila’au Range Complex at Makua are described in Section 2.

**Table 1-2:
Range Standards**

<i>Echelon/Maneuver area</i>	<i>LFX/CALFEX Meters</i>	<i>LFX/CALFEX Acres</i>
Squad (ISBC)	500-1,000 x 1,000	185
Platoon (IPBC)	500-1,500 x 4,000	988
Company (MPRC-Light)	1,000 x 4,600	1,137

Source: US Army Training Circular (TC) 25-8



- Roads/Trails
- Streams
- Army Owned/Leased Land
- Urbanized land
- Other land



5 0 5 Miles

Figure 1-1:
Location of Makua Military Reservation

**Table 1-3:
Maneuver Training Areas Available in Hawaii**

<i>Installation</i>	<i>Facility</i>	<i>Length (m)</i>	<i>Width (m)</i>	<i>Area (acres)</i>
Makua	CCAAC	900	2,000	457
Schofield Barracks	KR4/5 Infantry Battle Area	840	550	106
Pohakuloa Training Area	Range 10	800	400	80
Pohakuloa Training Area	Range 14	700	500	69

Source: G3 Range Division, USARHAW

1.4 MAKUA

1.4.1 History Makua Military Reservation, shown in Figure 1-2, was established in 1943 as a maneuver and impact area, but US military use of the property dates back to the 1920s, when three parcels on the upper valley floor were purchased for howitzer emplacements. After the bombing of Pearl Harbor on 7 December 1941, the Army used its authority under the state of martial law then in effect to take over the entire Makua-Kaena Point area for security and training operations. In December of 1942, the Army issued a Real Estate Directive for 6,600 acres of land at Makua that were already being used. Private parcels within the property were taken by condemnation, whereas territorial lands were conferred by the territorial governor’s consent.

In May of 1943, the territorial government granted a revocable permit for the military to use 6,600 acres “to assist in the present war effort extending for the duration of the present war and six months thereafter.” The site was used extensively for bombing and infantry training, but no records of ordnance expended on Makua were kept. It has remained under Army control ever since. After Hawaii was granted statehood in 1959, the federal government exercised its option to set aside lands for its continued use. A series of real estate actions resulted in 1964 in the current 4,190-acre mixture of leased, ceded, and fee-simple land holdings shown in Figure 1-3. The terms of the lease allow public access to Makua Beach, which lies between Farrington Highway and the shoreline.

On 4 May 1988, the CCAAC at Makua was dedicated and named in honor of Private First Class Herbert K. Pilila’au; a Waianae native awarded the Medal of Honor for action in Korea.

1.4.2 Land ownership Of the total current area of 4,190.47 acres, the Army owns 170 acres in fee simple, holds 1.64 acres by license, leases 782.35 acres from the State of Hawaii, and has use of 3,236.48 acres of ceded lands. Ceded lands are those originally controlled by the Kingdom of Hawaii, which were transferred (“ceded”) to the United States in 1898 when Hawaii was annexed as a territory. When Hawaii became a state in 1959, these ceded lands were granted to the State of Hawaii. Lands being actively used by the United States government were retained as ceded land. Figure 1-3 depicts land ownership at Makua. More than 70 percent of Army lands in Hawaii are ceded land, those retained by the United States government after the annexation of Hawaii.

The lease, which expires in 2029 and includes the 782.35 acres along Farrington Highway, requires the Army to allow employees of the State of Hawaii Board of Land and Natural Resources to enter the leased premises when necessary. Additionally, it also grants the right to develop public use of Kaneana Cave, including a foot trail and parking area associated with the cave. (US Army, 1997)

1.4.3 Facilities Existing facilities at Makua include fencing, an administration and classroom building (Army facility number 120), a battery shop (121), an observation tower (122), a 60,000-gallon elevated water tank (124), and a chlorinator shed (125). Two other significant man-made features of the site are two 300,000-gallon dip tanks used to hold water for fire-fighting purposes. Water is supplied via a pipeline connecting to the nearby municipal system. The total area used by the CCAAC, including parking, bivouac, ammunition storage, and staging, amounts to about 1,034 acres. All live fire is directed into the 457-acre grassy area within the southern firebreak road. Within the 457-acre area are a variety of surface and subsurface “objectives,” which is to say goals toward which training units are directed as a part of the exercise. These include structures made of sand-filled tires, simulated entrenchments, and several small emplacements designed to represent enemy strongpoints or defensive positions.

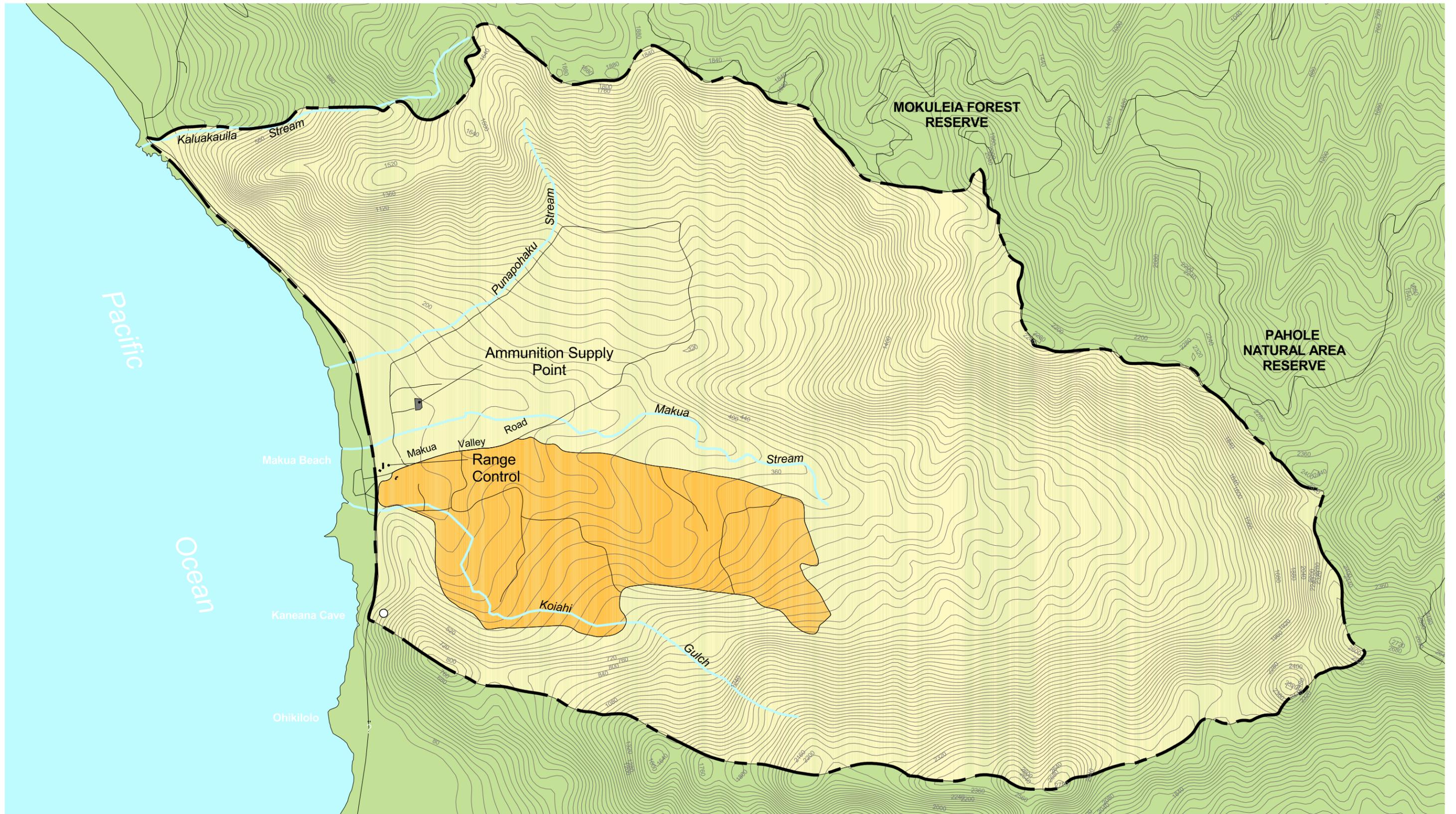
1.4.4 Past usage The Army, as the federal government’s agent, operates Makua, and is responsible for maintaining utilization data. In addition to the Army, the Marine Corps, Navy, Coast Guard, the Army Reserve, and the Hawaii Army National Guard also used the facility. A total of 20,583 military personnel trained at Makua in federal fiscal years (October 1 to September 30) 1997 and 1998. Army records show that all users scheduled Makua for 186 days of use in 1996, 303 days of use in FY 1997, and 224 days in FY 1998. Of the scheduled days, there were cancellations due to required range maintenance, fire hazard conditions, or changes in training. Army records also show actual use by all users was 90 days in 1996, 236 days in 1997, and 189 days in 1998. Army training facilities are normally scheduled for use 242 days per year in peacetime, so the high number of scheduled days demonstrates the significant demand for this facility.

Training records maintained by the 25th ID(L) show that since training was suspended in September of 1998, no training was conducted at Makua in FY 1999, 2000, or thus far in 2001. Prior to suspension of training, 25 ID(L) conducted 15 CALFEXs in FY 1997 and eighteen company live fire exercises in FY 1998

1.5 WHY THE 25th ID(L) MUST CONDUCT COMPANY MANEUVER CALFEX TRAINING.

“Train as you fight” is an essential principle of Army training doctrine, as outlined in Department of the Army Field Manual 25-100, Battle Focused Training (Department of the Army, 1998). This principle represents a significant progression in the Army’s doctrine and has been highlighted by the success of recent conflicts. Under 25 ID(L) and USARHAW Regulation 350-1, *Training*, each infantry company is required to conduct combined-arms maneuver live-fire exercises annually. (25th ID(L) and USARHAW, 2000) This regulation is consistent with the AR 350-1, and with the US Army Pacific Command Training Guidance, and is supported by the Department of the Army Pamphlet 350-38, Standards in Weapons Training, Table 5-38 (Department of the Army, 1997).

The Division’s primary mission is to deploy to perform combat operations. In order to carry out this mission, the units within the division must be properly trained. A key component in the training of an infantry company is a maneuver CALFEX. The requirements of the CALFEX are set forth in 1.3, above.



 Road/Trail
 Stream

 Makua Military Reservation
 CCAAC Impact Area
 Other Lands

Data Source: Final Draft Wildland Fire Management Plan,
Pohakuloa & Oahu Training Areas,
January 2000

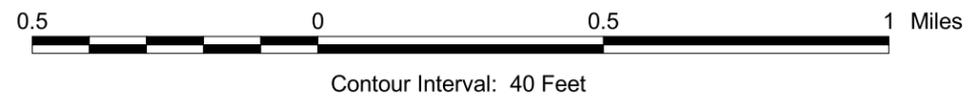
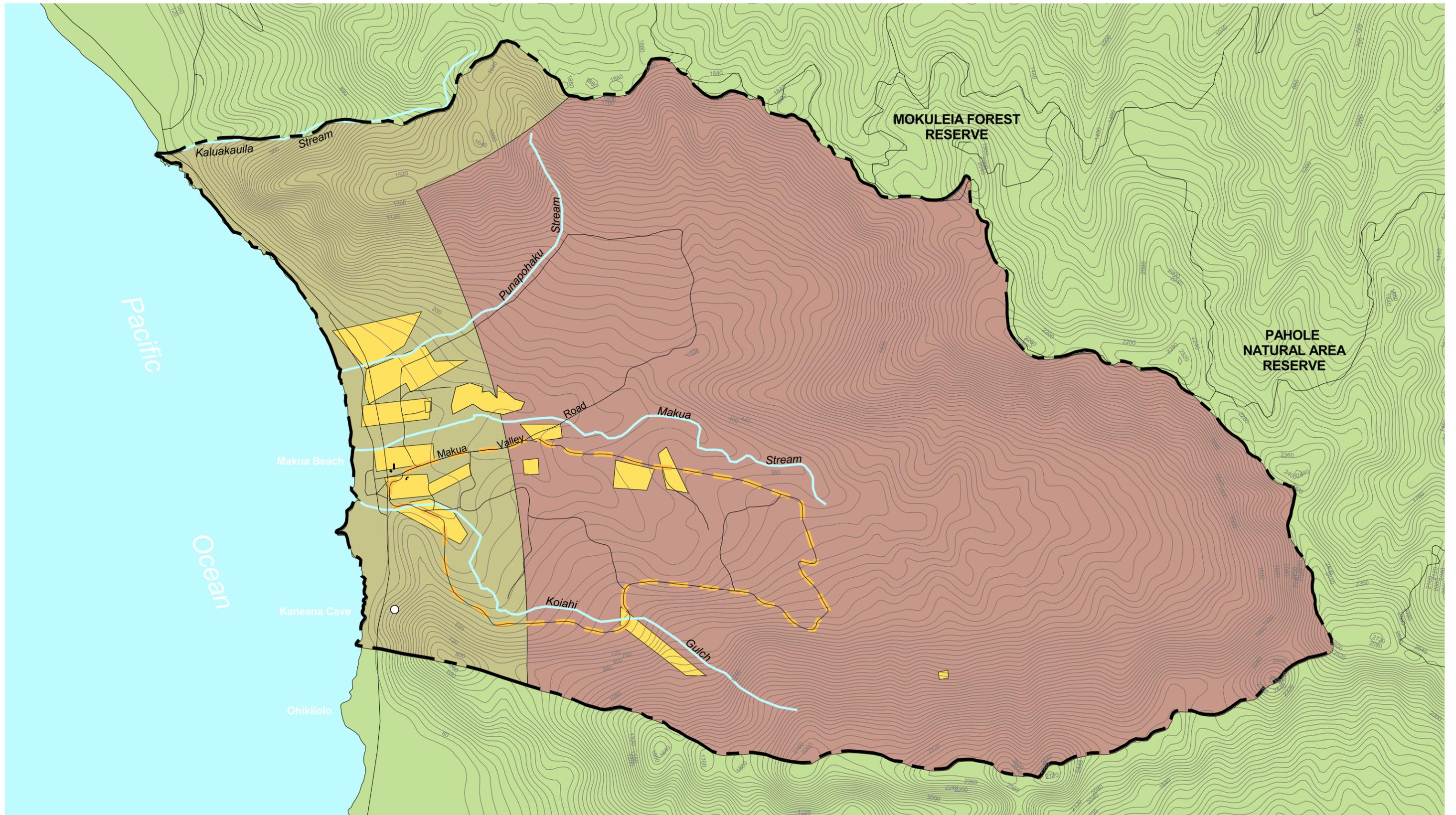


Figure 1-2:
Makua Military Reservation



-  MMR Boundary
-  Ceded lands
-  Fee simple ownership
-  Leased lands
-  Other lands
-  Road/Trail
-  Stream
-  CCAAC impact area boundary



Contour Interval: 40 Feet

Data Source: Information Paper and Map - Land Ownership at Makua Military Reservation, APVG-GWY-O, July 1997



**Figure 1-3:
Land Ownership**

These tasks supports the Division's mission and further support the Army's mission of fighting and winning this nation's wars.

Though infantry companies are required to conduct a company maneuver CALFEX once a year, its constituent squads must live fire once each quarter, and the platoons semi-annually. Because these lower-level requirements may be embedded in the larger unit task, a company will conduct live-fire maneuver training at some level at least four times a year. All live-fire exercises—including squad, platoon, and company level—could be successfully executed on the CCAAC at Makua. A minimum time requirement to support company maneuver CALFEXs for the eighteen companies of the 25th ID(L) includes:

$$18 \text{ companies} \times 5 \text{ days/company} \times 1 \text{ iteration/year} = 90 \text{ days required per year}$$

1.5.1 LAND REQUIREMENTS FOR A MANEUVER CALFEX The Department of the Army standard range design for an Infantry Company Battle Course (the facility that would replace the CCAAC at Makua) has been combined into one of the several functions of the Multi-Purpose Range Complex (Light) (MPRC-L) for planning purposes. The optimal land area is provided in Training Circular (TC) 25-8, Training Ranges, as 1,137 acres (Table 1-3), which includes the physical part of the complex with target areas and the land used for movement towards the objectives (Department of the Army, 1992). This area must allow for multiple objectives to be placed far enough apart to allow for simultaneous use, but close enough to allow elements of the company to work together in reaching them. It also allows deployment of the various long-range weapons available during a company live-fire exercise. The concept for a company combined-arms assault course (CCAAC) was designed by the 25th ID(L) in Hawaii to maximize the potential of the training areas available to provide the minimum adequate requirements needed to conduct a combined-arms maneuver live fire to standard. Table 1-2 and Table 1-3 offer a comparison between the Army standard ranges and maneuver live fire ranges available in Hawaii.

A safety barrier or buffer area must be included in the down-range, or direction-of-fire, area to stop or contain the ballistics effects of the weapons fired. The size of the buffer will depend on the suitability of surrounding terrain to contain weapons effects. Such terrain may be steep and forested, as it is at Makua. The site should have enough relief to provide cover during maneuver, but not be so steep or rugged that soldiers cannot move across it. In general, slopes should be less than 10 percent. The entire range should be visible from various points in the complex. Some tall vegetation may be present, but the site cannot be entirely forested. The terrain should replicate that of the areas in the Pacific where the 25th ID(L) might deploy.

Ideally training areas should be located close to the home station, which in this case is Schofield Barracks. This reduces personnel deployment time concerns and increases availability of units for deployment if a real world crisis arises, compared to training locations in the Continental United States. Extended deployments result in extremely high operational tempo (increased time away from families and home station) and degrade the soldiers' ability to efficiently perform their duties.

1.5.2 Suitability of Makua for company maneuver CALFEXs Makua best satisfies the company maneuver CALFEX training requirement, and provides superior maneuver terrain. Makua offers the largest combined-arms maneuver live-fire training range currently available in the State of Hawaii. Makua is the only available training area in Hawaii where company maneuver CALFEXs can be conducted. Makua also provides:

- the largest available single contiguous range complex for company level combined-arms; maneuver live-fire training in Hawaii, where the 25th ID(L) is stationed.
- terrain common to other areas of the Pacific Rim, where the 25th ID(L) might be expected to deploy;
- unique targeting systems developed for the CCAAC, including a number of firing points capable of supporting various weapons systems;
- proximity to Schofield Barracks, the home station of 25th ID (Light);
- a natural buffer area provided by the shape of the valley; and
- substantial nonresidential land between Makua and the surrounding communities.

Makua falls short of the 1,137 acres set out as the optimal land for an MPRC-L. But its combination of terrain, buffer zone, and other factors mean that it meets the minimum requirements necessary to conduct maneuver CALFEX.

1.5.3 Impacts of restricted training The company maneuver CALFEX is a key element in the progression of Army training for light infantry units. Therefore, the CCAAC is necessary to meet mission requirements. Failure to adequately train its units does not relieve the Army of its obligation to deploy those units into combat. Closure of Makua since September 1998 has negatively impacted the division's ability to train its soldiers and leaders in advanced combat skills. Battalion commanders are currently, and have been for at least two years, reporting through their Unit Status Reports (USR) to the Department of the Army that the temporary closure of Makua is a training constraint. This constraint over time could result in a decrease in readiness for combat units. The resumption of training at Makua is necessary for the 25th ID(L) to achieve required readiness standards.

It is critical to have trained and ready units, but it is just as critical to have trained and ready leaders who will lead these units and soldiers. The Army is training tomorrow's leaders. Commanders only serve 12 to 24 months as company commanders. The loss of training at Makua since 1998 has already resulted in some company commanders not experiencing a company maneuver CALFEX. If company commanders do not receive the necessary combined-arms maneuver live-fire experience, their ability to function effectively at higher levels (such as battalion commander) is significantly diminished. Most importantly, when commanders, non-commissioned officers, and individual soldiers do not receive this type of training, the risk of mission failure and casualties for the unit is substantially increased.

In combat, infantry soldiers carry light weapons and must rely on other units (such as artillery) to bring indirect fire on targets before the infantry attacks. This requires split second coordination and training with real weapons is the only way to develop this capability. Soldiers who see the indirect fire brought on a target will be confident in the use of that support when it becomes necessary in real combat. When they hear the tremendous noise of nearby explosions, soldiers will they realize that once the dust settles, they can continue their missions and advance on targets where the enemy has already been subject to bombardment.

The maneuver CALFEX is also the only opportunity infantry soldiers in company strength have to operate against a target using real weapons and real ammunition. Essentially, one element of an attacking force pins down the enemy at the target while the other element maneuvers closer. Then the groups switch

roles, until the target is overrun and occupied. Until soldiers perform this task using real ammunition, they are not truly prepared to do it in combat. The soldiers need live ammunition training while maneuvering to achieve this skill. Live fire and stationery targets alone will not work, nor will maneuvering without live ammunition.

Soldiers must learn these skills, and the skills must be relearned or reinforced at least annually. These tasks are the actions these troops will be required to perform in combat against real enemies. On-the-job training in war results in more casualties. If the Division's infantry companies and fire support elements cannot do these tasks, soldiers will die needlessly and the mission will not be accomplished. The maneuver CALFEX is the only way the soldiers can be trained in these critical tasks.

There are not enough opportunities to do this training when elements of the Division train outside Hawaii. As trained soldiers leave the units and new ones come in without the training, and as trained soldiers lose their skills over the passage of time, unit readiness to perform missions goes steadily down. Each day these units remain untrained erodes their combat effectiveness more. Since the closure of Makua, the Division's readiness has declined and continues to do so. Again, soldiers' lives are at stake, as well as mission accomplishment.

1.5.4. Alternate training locations Since the voluntary suspension of training at the CCAAC at Makua, the 25th ID(L) has attempted to provide live-fire training opportunities for its soldiers. In FY 1999, the 25th ID(L) conducted three company-level combined-arms live fires at the National Training Center (NTC) at Fort Irwin, CA, and three in Thailand. In FY 2000, the 25th ID(L) conducted no company maneuver CALFEXs that met the division standard. In FY 2001, the 25th ID(L) will complete a total of seven company maneuver CALFEXs, all at the Joint Readiness Training Center (JRTC), Fort Polk, LA. The 25th ID(L) has no other company maneuver CALFEX opportunities expected during the remainder of FY 2001. Thus, all company level combined-arms maneuver live fire training done to standard since September 1998 has been conducted outside the State of Hawaii. In FY 99, 00 and 01, there should have been 54 company level maneuver CALFEXs conducted to standard. In fact, the 25 ID(L) will only have conducted 13 to standard by the end of FY 01. Only a handful of these exercises can be conducted outside Hawaii in the years to come. The Division cannot continue to sustain a 75 percent reduction in its required company maneuver CALFEX training. To do so places at risk the lives of 25th ID(L) soldiers and mission accomplishment of national security objectives in the Pacific.

PTA does not allow the Army to maintain its combat readiness within the existing resources. PTA range facilities do not currently exist to support a company maneuver CALFEX to standard. Currently no funds have been programmed to construct additional ranges that would support company maneuver CALFEX training in the State of Hawaii. Approval of funds for these types of projects takes five to seven years. In addition, the environmental analysis, design and construction would take four more years. Army units that train at Pohakuloa are stationed on Oahu. If completed, transportation of troops and equipment between the islands is time-consuming, very expensive and increases personnel deployments. The PTA alternative is further explored in Section 3.

Similar but smaller facilities are available at the Infantry Platoon Battle Courses at Kolekole Range (KR) 4/5 Infantry Battle Area (IBA) at Schofield Barracks. However, this range lacks sufficient width and depth to meet Department of the Army design specifications (as stated in TC 25-8,) for Infantry Platoon Battle Courses (Department of the Army, 1992) and as currently configured, KR4/5 at Schofield Barracks

does not meet company maneuver CALFEX requirements. Range 10 at PTA and the IBA are minimally sufficient for live-fire training only up to the platoon level. Thus, neither PTA nor the IBA provide the capability to conduct company maneuver CALFEX training to standard.