



Camp Grayling Joint Maneuver Training Center



Established 1913

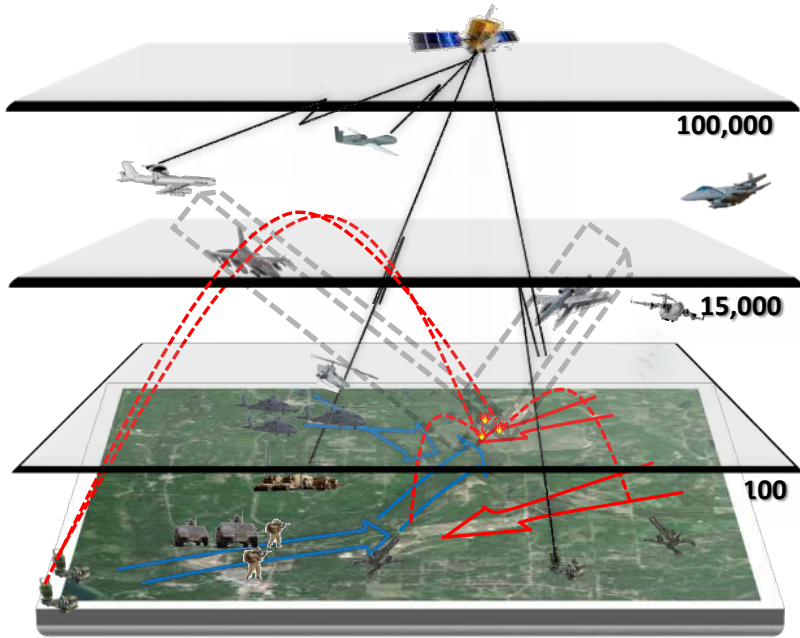
**Garrison Commander
COL Scott Meyers**

**Deputy Garrison Commander
LTC Brian K Burrell**

**Garrison Command Sergeant Major
CSM Kevin Palmatier**

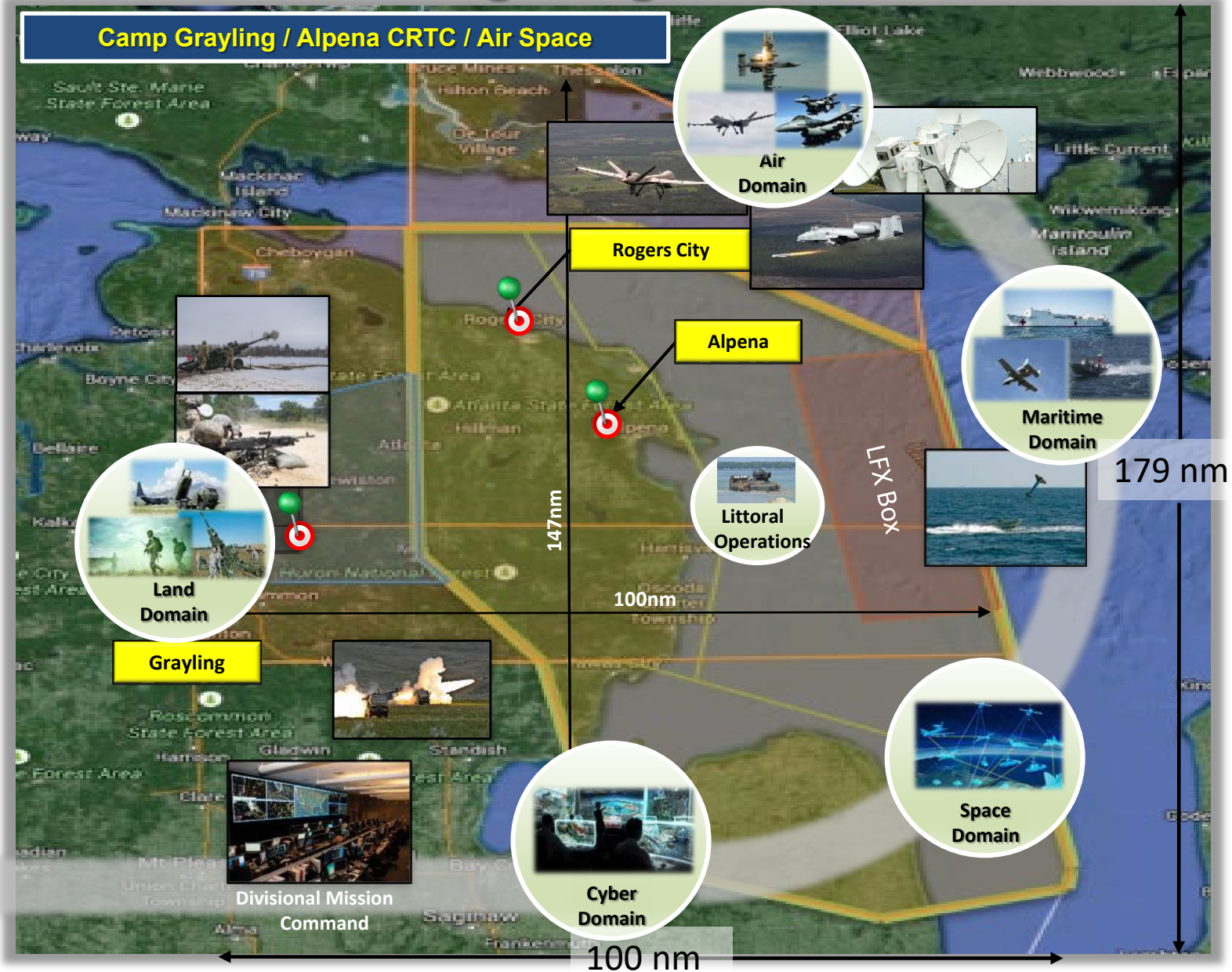


National All Domain Warfighting Center



Live – Integrated All Domain Training Environment

Domain Convergence





Joint Training Environment – Airspace/MOA

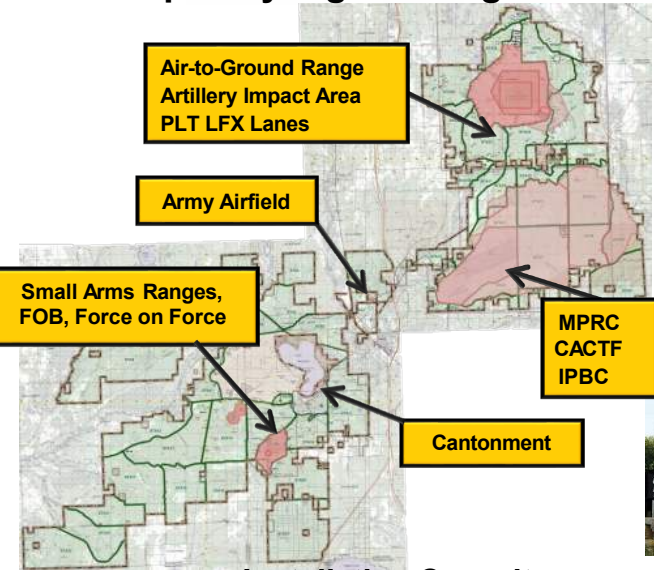
- Large restricted airspace up to 23,000 feet MSL for aerial bombing
- RAS includes airspace over the CACTF, allowing for UAS observation of urban training
- Class-D airspace when the Grayling Air Traffic Control Tower is open, uncontrolled airspace when the tower is closed
- Class-D airspace overlaps R4201B providing a clear corridor from Grayling AAF to the restricted airspace to the northwest of the airfield





Joint Training Environment – Strategic Power Projection

Camp Grayling Training Center

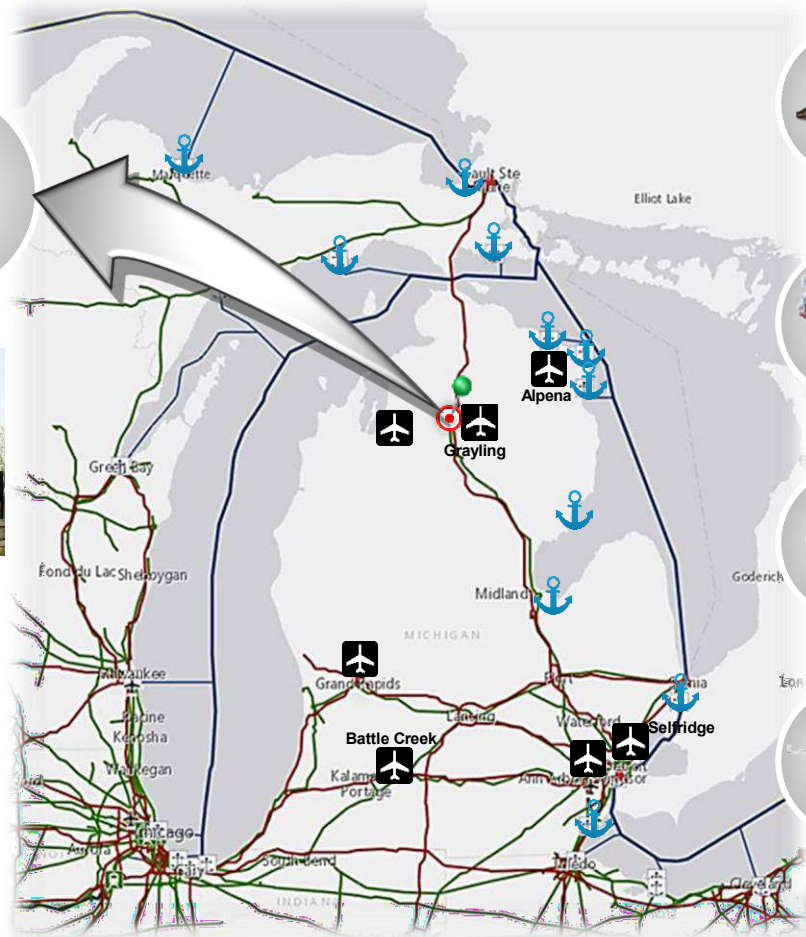


Installation Capacity:

- ✓ 148,000 Acres
- ✓ Housing for 8,000 personnel
- ✓ Army Airfield 2x5,000' runways; C130 Capable; 60 Helipads; UAS (*Alpena CRTC augments this*)
- ✓ Rail Head 2x1500' spurs
- ✓ MATES – Heavy Capable (7.5 & 25 ton lift)

Multi-Domain Training Capacity:

- ✓ 4-Season Terrain Sets; BDE – DIV Level Training
- ✓ 58 Training Areas
- ✓ 43 live fire ranges
- ✓ Air to Ground Range
- ✓ 17,000 Square Miles of Special Use Airspace
- ✓ MPRC Heavy (Tank Gunnery)
- ✓ CACTF & Simulations Center
- ✓ Cyber / EW Integration



Legend

- Rail Lines
- Water MSRs
- Expressway MSRs
- APOD/APOE
- SPOD/SPOE*

Michigan's Multimodal Capability

- Rail**
 - ✓ 3,900+ miles of freight railway.
 - ✓ Camp Grayling's 2x1500' spurs connect to the Midwest Regional Rail Initiative via the Lake State Railway to Detroit.
- Sea**
 - ✓ 38 deep-water ports.
 - ✓ All ports can connect to the Atlantic via the St. Lawrence Seaway.
 - **Limitations exist regarding roll-on, roll-off cargo ships**
- Interstate**
 - ✓ 1,241 miles of Interstate Highway System.
 - ✓ Ease of access to Camp Grayling from both the East and West entrances to the State.
- Air**
 - ✓ Grayling Army Airfield works in conjunction with Alpena for troop and cargo movement.
 - ✓ Grayling – C-130 capable; ACRTC – C5 capable; Selfridge – C5 capable.

APOD/APOE	RUNWAYS	Length
ACRTC/ Alpena	2	9001' / 5028'
GAAF/ Grayling	1	5000'
SANGB/ Selfridge	1	9000'
BCAB/ Battle Creek	1	10000'
Detroit Metro	6	12000' / 10000'
Gerald Ford International	3	10000' / 8501'

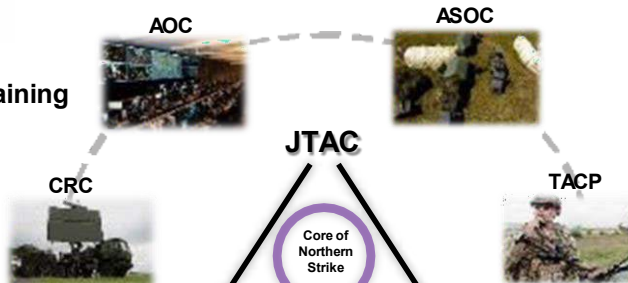


Joint Exercise Northern Strike

Grayling MTC



Grayling
Joint Integrated Training
Environment



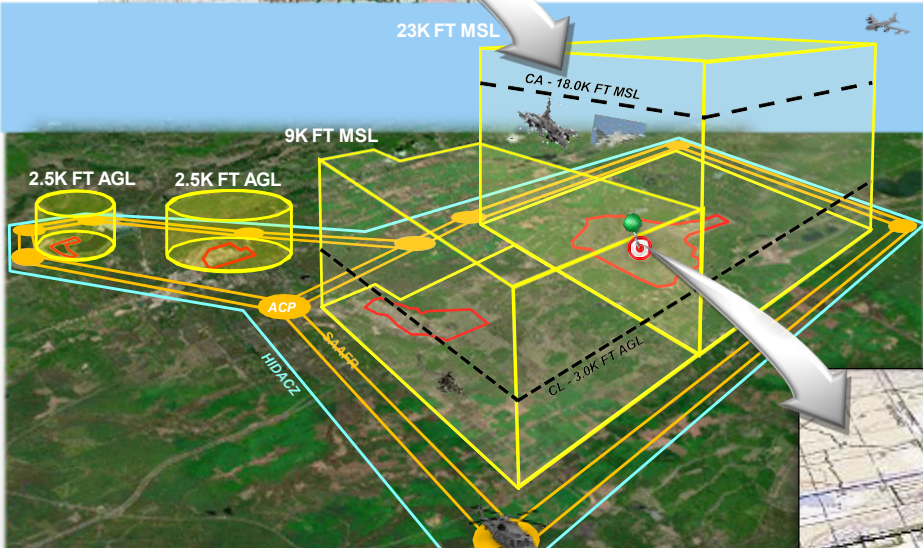
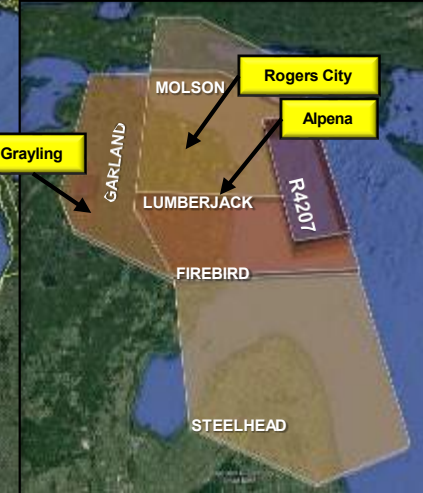
Kill Chain Closure = LETHALITY

REPETITIOUS LIVE FIRE INTEGRATION

Alpena CRTC



Alpena / Grayling
Special Use Airspace



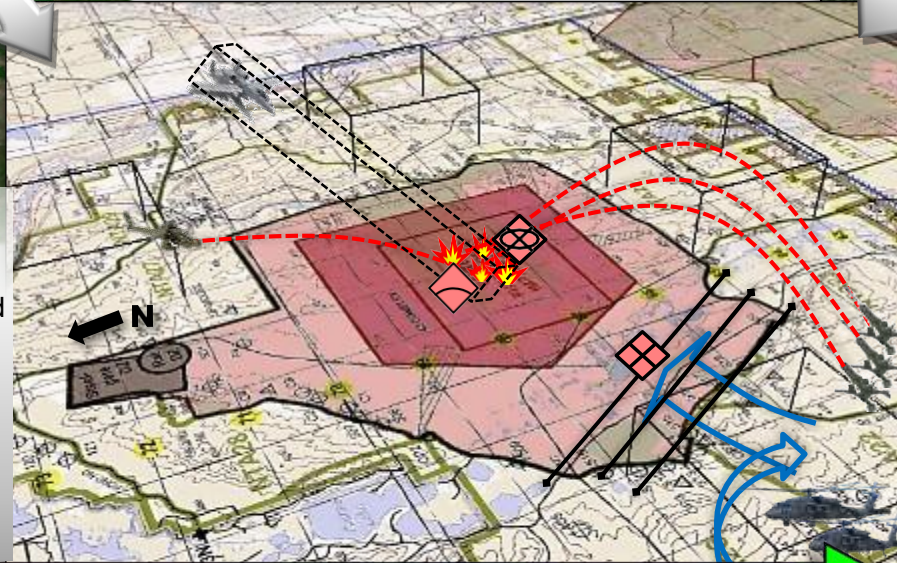
Joint Fires Training Progression:

Academics: Graduate Level Fires Planning & Execution.

FCX 1 (Walk) = Company Commander, Fire Support Officer and JTAC integrate Close Air Support (CAS) and Direct Support Artillery.

FCX 2 (Walk) = Observer/Controller Teams lead scenarios which allow Commanders to integrate JTACs, CAS, and Artillery in planning process.

CALFEX (Run) = Infantry Company full integration



Operational: Key Readiness Outputs:

- Joint All-Domain C2 exercised through Air Operations Center (AOC), Air Operations Group (AOG), and Battlefield Coordination Det. (BCD) integration.
- Live integration of C4ISR platforms.

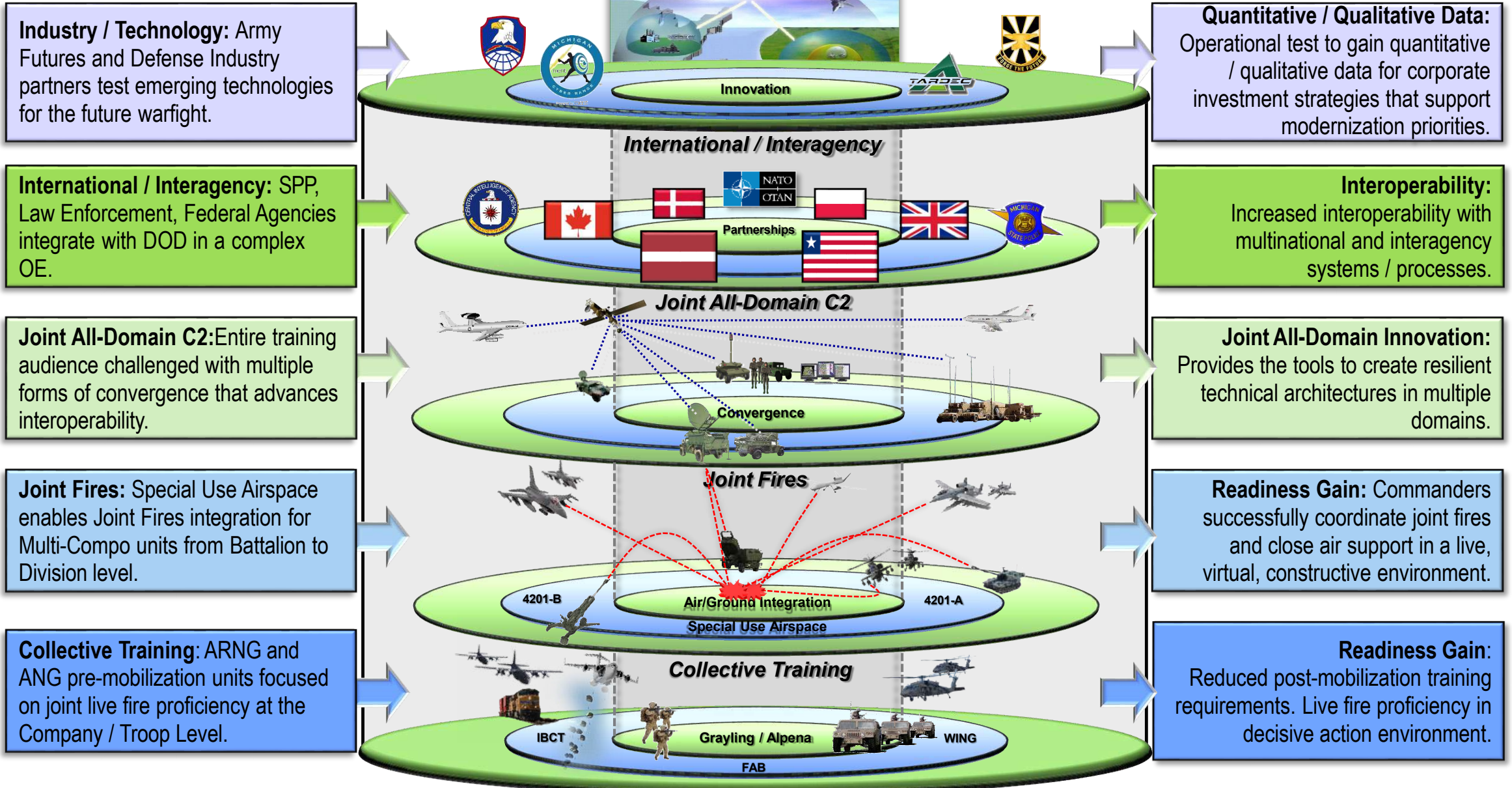
Tactical:

- **Company:** Integration of Direct Fires & Indirect Fire Support.
- **Battalion:** Synchronization of Fires and Close Air Support.
- **Brigade / Division:** Employment of Fires and Coordination of Air-Ground Operations.
- **Air Readiness Estimates:** 750 JTAC Controls; 300+ CAS Sorties; 20 CSAR/PR Missions; 20+ AIMT & CFF





Northern Strike Readiness Layers





Northern Strike – Return on Investment

Requirement

- Lack of collective training venues outside of the CTCs to build readiness within a joint live fire construct.
- Widespread skill deficiency in Joint Fires planning and integration at the **BCT**, **DIV**, and **EAB** levels.
- T-level atrophy following CTC rotations.
- Enterprise Solution for the Convergence of Modernization Priorities.

Training Audience Foundation

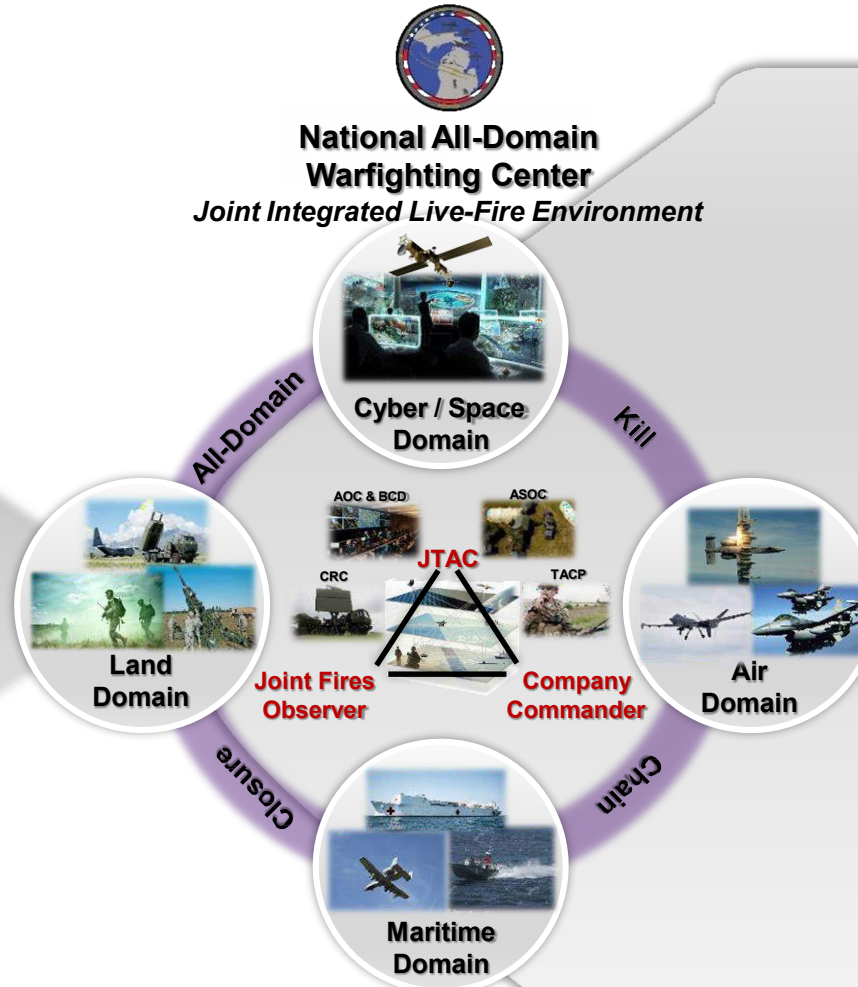


- Army National Guard**
- Post-CTC IBCT (Training Audience)
 - ADAM/BAE, DIV Rep. Cell, BCD
 - SOTF, MMB, ECAB(-)
 - CSSB, SUS BDE, EAB Enablers



- ANG Air Expeditionary Wing (AEW)**
- A-10, F-16, ASOS/JTACs (Aligned to IBCT)
 - KC-135, C-130, JSTARS, MQ-9
 - ASOS, CRC, COMMS, AOB, AOC (MI)

- **Average # of Participants: 5-6K**
- **Cost / Rotation: \$20.7M (Full IBCT)**
- **COMPO 2 – 2x Rotations Annually by 2022**



Northern Strike is a Tailorable, Scalable, and Cost-Effective All-Domain Readiness Producer

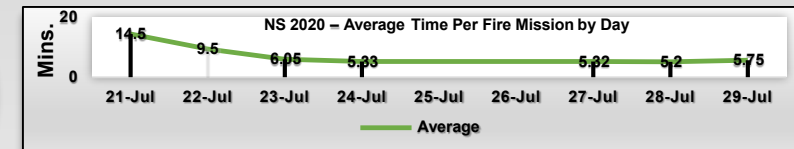
Readiness Outputs

Collective Training Readiness

- Post NS CUSR trends show significant P-Level and T-Level improvement.
- On average, units increase one rating with many achieving T1/T2.

Sensor-to-Shooter Efficiency

- Average Response times for surface fires **reduced from >14 min to <6 min.**



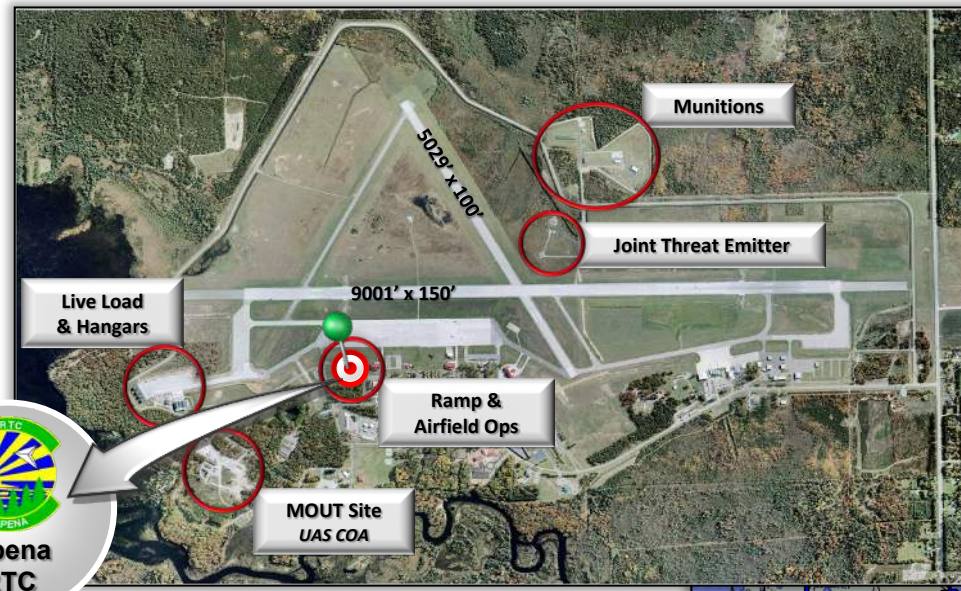
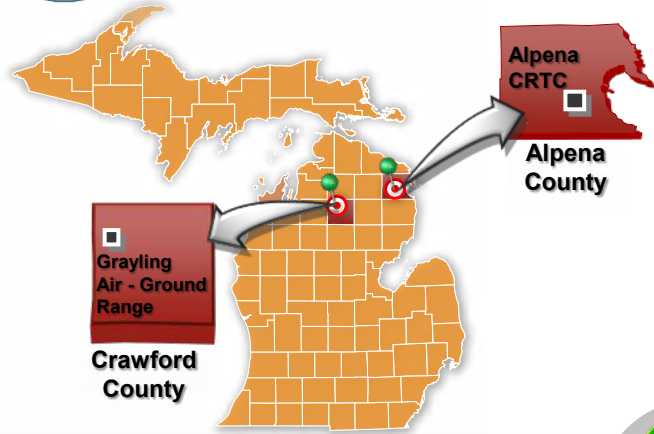
Average Task Iterations / Rotation

Close Air Support	250
Intel, Surveillance, Recon	20
Maritime (Counter Fast Attack)	35
Combat Search & Rescue	6
Aerial Refueling	15
Air Mobility (Lift / Drop)	20
Civil Air Patrol (Red Air, ISR)	40
Electronic Warfare	8

~425 Integrated Missions, 1500 HRS / Rotation



Alpena Combat Readiness Training Center



Special Use Airspace (SUA)

- Largest Airspace East of Mississippi
- ATCAA's: 17,000 Square Miles
- MOA's: 10,000 Square Miles
- 11 Separate Airspace OPNS Areas
- Configurable: 300 AGL – 50K AGL



Infrastructure & Operations

- 646 Acres
- 1,100 Bed Spaces
- 104 Buildings
- 565,000 sqft
- Conference Space (700+)
- 2x Runways: 9K&5K
- 2,450'x250' Ramp
- 6 FW/RW Shelters
- 7 Classrooms / 2 DLCs
- Firing Range / Fire Trainer

Logistical Movement & Support

- Hot Pit Refueling
- Inert Storage
- Explosive Storage
- DLA Fuel Site
- 420K DF/JAA Tanks
- LOX Facility

Simulations Capabilities

- 3 Joint Threat Emitters
- 1 IR MANPAD Emitter
- 2 Data Link Gateways (Link16/SADL)
- Surrogate Threats
- MSCT & RADS Feed
- 12 P5 Pods Available

Grayling Air to Ground Gunnery Range

- 2 Buildings / 37 Facilities
- Access to Grayling's 148,000 Acres
- 20MM, 30MM, MK-82, GBU-12, GBU-31, GBU-38 Capable
- Scoring Arrays, Heated Targets, Smoky SAMs
- Multiple Villages and Urban Areas With Over 200 Live and Dry Targets
- IR and Laser Marking Capable
- 3 x Drop Zones



Adaptable All-Domain Training Areas

- 1,000 Square Miles
- Surface to 45K MSL
- Live and Inert Capable
- Chesty Waters Drop Zone
- Rogers City Quarry – Littoral and Full Mission Profile Area





Alpena CRTC Campus/Facilities



Real Property	Total #/Acres/Square Feet
Buildings	106
Facilities	253
Total Building Area	560,099 SF
Total Leased Acreage	646 acres
Total Plant Replacement Cost	382,880,000



Camp Grayling Joint Maneuver Training Center - Land

History

Founded in 1913 when local lumber baron Rasmus Hanson donated 13,000 acres to the State of Michigan for military training. Camp Grayling has since grown to 148,000 acres.



Crawford County



Camp Grayling

Infrastructure & Operations

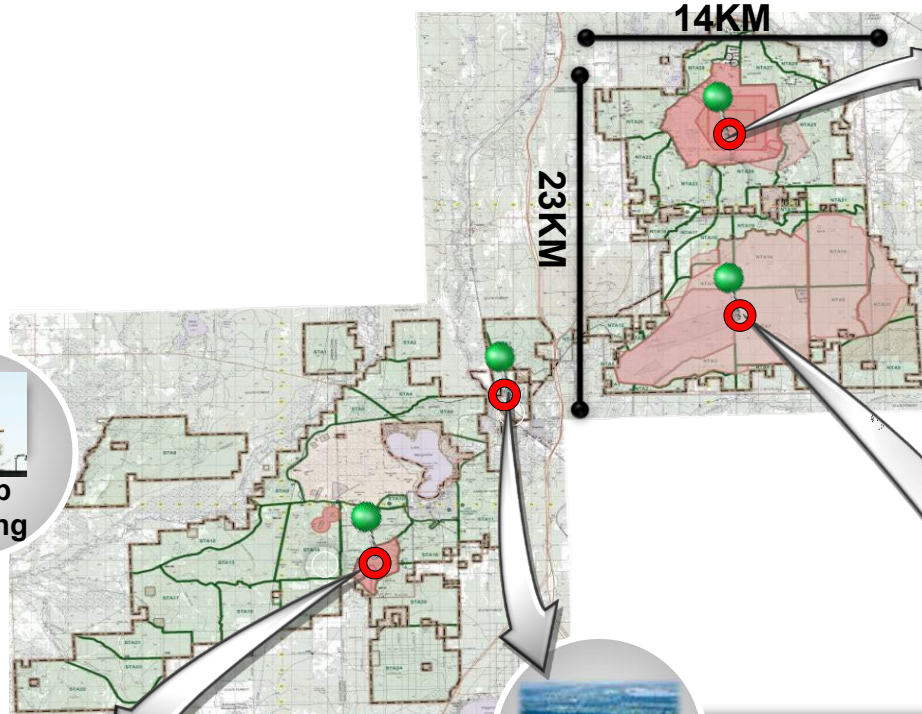
- 148,000 Acres
- 8,000 Transient Bed Spaces
- 429 Buildings (1.8M sqft)
- 83 Miles of Paved Roads
- 482 Miles of Unpaved/Trails
- Contracted Fire Fighting
- Wildland Fire (Internal)
- 7 Classrooms / 2 DLCs

Logistical Movement & Support

- 3 Hours From Detroit via I-75
- 5 Hours From Chicago
- 2 Rail Spurs, 15 Cars/Spur
- 1 Rail Spur, 15 Cars
- Rail Maintenance Facility
- Class I, II, V Warehouse
- 118K sqft Total Storage
- DLA Bulk Fuel Site
- 30,000 gal DF & JP Tanks
- ASP (SA, HIMARTS, NATO)

Simulations Capabilities

- Engagement Skills Trainer II
- Call-for-Fire Trainer
- HMMWV Egress Trainer
- BCT Individual Reality Trainer
- Virtual Convoy Operations
- Virtual Battle Simulation 3
- Unstabilized Gunnery Trainer
- Tactical Combat Casualty Care



40 Complex

Joint Training, Maneuver Live Fires, Artillery Impact Area, Special Use Airspace

- 17,000 Acres of Maneuver Space
- 10,000 Acres of Live Fire Area
- 2,800 Acres of Duded Impact Area
- All Tube Artillery & Mortars, 104 Firing Points
- All Small Arms up to MK-19, Door Gunnery
- AT-4, Javelin, and TOW
- Company Live Fire & Defense (Non-Std)
- Live Drops up to 500Lbs (MK82)
- Restricted Airspace up to 23,000 Feet



South Camp

Light Maneuver Area & Small Arms Ranges

- Qual Ranges: M9 – M240B
- Known Distance Range
- Grenade Ranges
- Light Demo Range
- Fire & Movement Range
- Infantry Squad Battle Course
- 60MM Mortar Impact Area



GAAF

Grayling Army Airfield

- 5000' Runway *Rail Spurs*
- Housing for 260 Personnel
- Dining Facility
- Training, Office, Academic Facilities
- UAS Shadow Simulator
- 400+ Square Miles of Controlled Airspace
- Fire Barn & Municipal Fire



30 Complex MPRC

Multi-Purpose Range Complex (Heavy)

- 42,000 Acres of Maneuver Space
- 5,300 Acres Fenced
- M2 Qualification Range
- MK19 Qualification Range
- Sniper Range
- Infantry Platoon Battle Course
- Convoy Live Fire
- MLRS/HIMARS Firing Area
- UAS Operations Day/Night
- 3D Modeled for Virtual Events
- Maneuver & Training Equipment Site



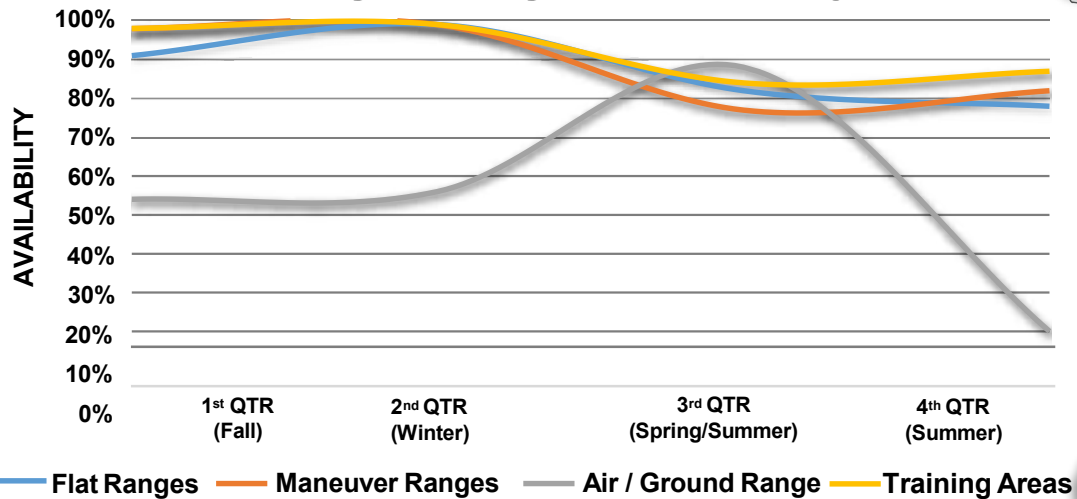
4 Season All-Weather Joint Training Capability



Camp Grayling

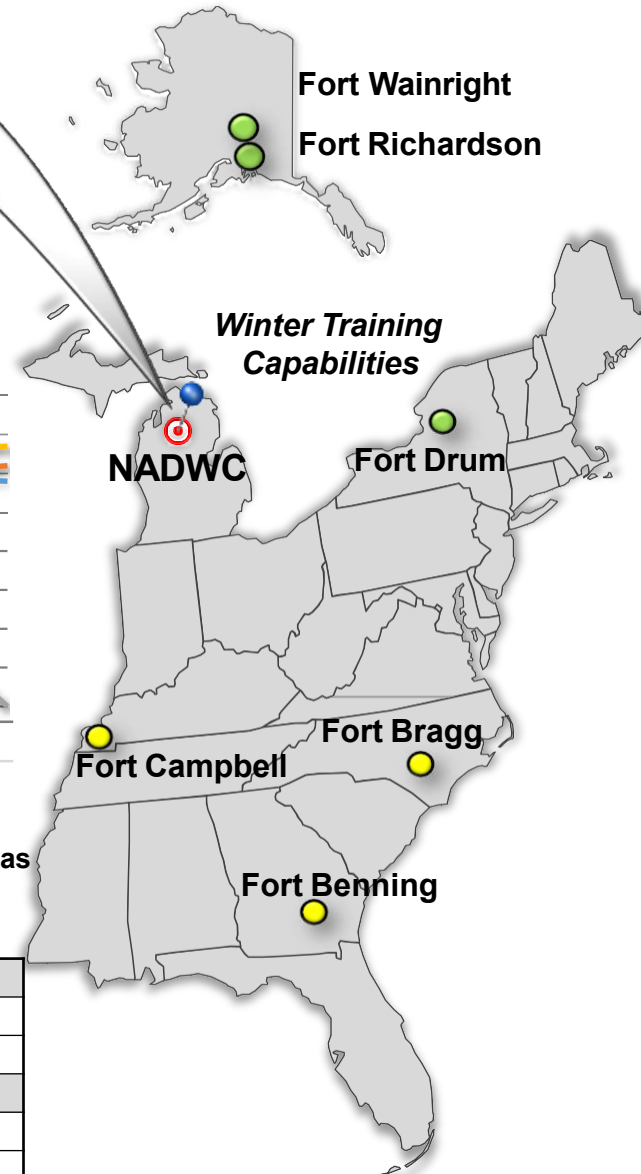
- ✓ Camp Grayling is an ideal location to conduct all weather, large scale, Division centric combat operations in a joint, all-domain environment.
- ✓ Camp Grayling has the ability to quadruple throughput based on current utilization rates, particularly during winter months via Exercise WINTER STRIKE.

Annual Average Range Availability

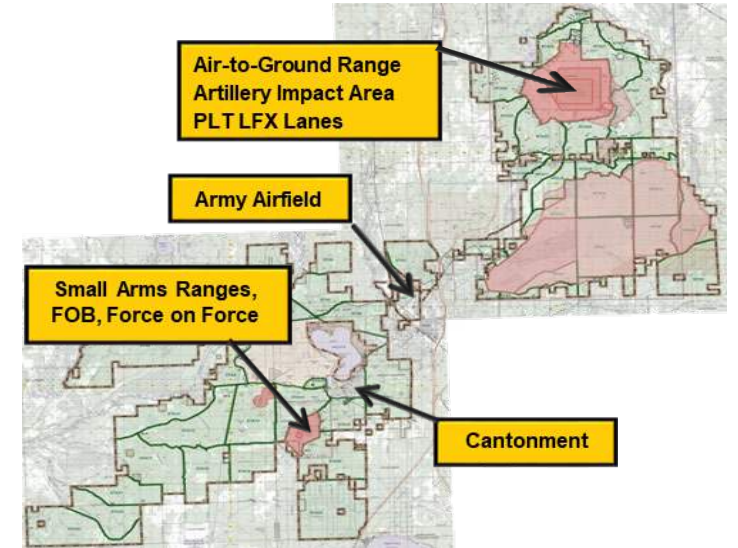


Grayling, MI – Climate Averages

	JAN	FEB	MAR	APR	MAY	JUN
Average Temps - H/L	26/8	29/8	39/15	53/29	66/39	76/49
Average Snowfall	30	22	13	4	0	0
	JUL	AUG	SEP	OCT	NOV	DEC
Average Temps - H/L	80/54	77/52	69/44	56/34	42/25	30/16
Average Snowfall	0	0	0	1	9	26



Camp Grayling Training Center



Installation Capacity:

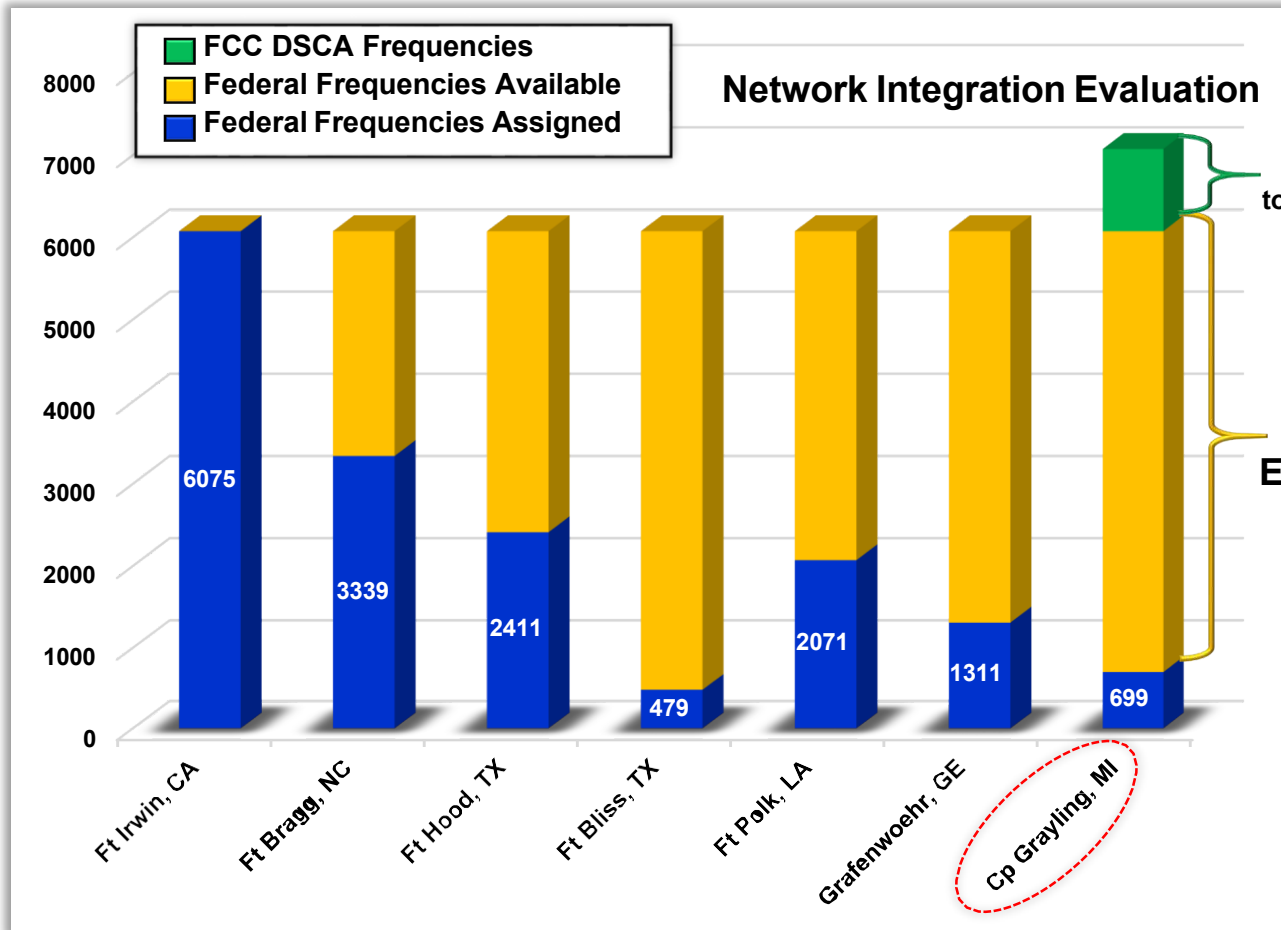
- ✓ 148,000 Acres
- ✓ Housing for 8,000 personnel
- ✓ Army Airfield 2x5,000' runways; C130 Capable; 60 Helipads; UAS (*Alpena CRTC augments this*)
- ✓ Rail Head 2x1500' spurs
- ✓ MATES – Heavy Capable (7.5 & 25 ton lift)

All-Domain Training Capacity:

- ✓ 4-Season Terrain Sets; BDE – DIV Level Training
- ✓ Approximates Northern European climate
- ✓ 43 live fire ranges, 58 Training Areas
- ✓ Air to Ground Range
- ✓ 17,000 Square Miles of Special Use Airspace
- ✓ MPRC Heavy (Tank Gunnery)
- ✓ CACTF & Simulations Center
- ✓ Cyber / EW Integration



Grayling Spectrum Analysis



Camp Grayling is in a geographically ideal location for DoD Spectrum use.

1. Very little urban development leading to a non- contested spectrum environment for DoD Departments/Agencies/Organizations (DAOs)
2. There are very few currently existing DoD frequency assignments (699 assignments within 100 miles compared to Ft Irwin with over 6000 assignments within 100 miles)
3. This lack of congestion leaves much of the spectrum available for assignment to the MIARNG as needed for exercises.

- Data depicts all Federal Government frequency assignments within 100 miles of each location
- Data from Spectrum XXI frequency assignments as of 06MAY16
- Grayling Spectrum Growth is a collaborative effort with ARCYBER/G3-Cyber to secure a spectrum footprint that is highly compatible with Ft Bliss (NIE) and Ft Irwin



Joint Training Supported by CGJMTC

South Camp

Maneuver Area and Small Arms Ranges

Small Arms Ranges

- Weapons qualification ranges from M9 through 240B
- Infantry Squad Battle Course (ISBC)
- 60mm Mortar
- Grenade Launcher and Grenade Ranges
- Light Demo Range
- Fire and Movement Range
- Known Distance Range
- Water Ops Lake Margrethe
- Urban Assault Course (UAC)



Soldiers in hasty fighting positions during an eXportable Combat Training Capability (XCTC) Rotation in 2018.



Marine Corps AAVs Splash into South Bay of Lake Margrethe

Future Improvements

- 2 lane MK-19 Range in 13 Complex
- Buddy Fire and Maneuver upgrade



CGJMTC 30 Complex – Multipurpose Range Complex (MPRC)

30 Complex Capabilities

- 10-Lane Known Distance Range
- Infantry Platoon Battle Course (IPBC)
- Multipurpose Range Complex Heavy (MPRC)
- MLRS/HIMARS Firing Areas
- UAS (Day & Night Ops)
- Combined Arms Collective Training Facility (CACTF)
- Fiber optic connection ports
- Mounted, Dismounted and Attack Rotary Wing Joint CALFEX capability
- R-4201B airspace up to 9K AGL, proposed to FL230
- Proposed Grayling MOA's will expand protected air maneuvering space
- Portable Target Package (303 SITs, 37 SATs)
- Miller DZ: 200 acre area capable of handling personnel and cargo drops
- 3D modeling has been completed to assist in virtual training events with VBS3

Future Improvements (In RCMP)

- Multipurpose Machine Gun range with Sniper Lanes
- MPRC-H Target Package
- Scout RECCE Range



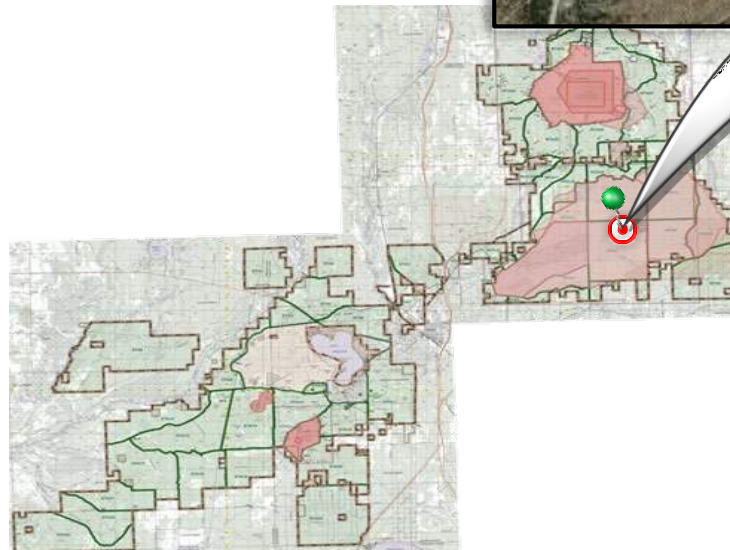
M1 Variants

- Two Firing Lanes on the MPRC
- Table XII Capable
- Armored Tank Boresight/Maint/Calibration Capabilities
- 51 miles Maneuver Tank trails
- 7.62mm, .50 Cal, 105mm and 120 mm SABOT capabilities
- Year-Round Availability
- Artic Weather Capable
- 8 Defensive Defilades
- 6 Offensive Fire Boxes



HIMARS

- Total Firing Points: 4
- FP 630 to MPRC: 8,350 Meters
- Range 37 to Miller DZ: 10,305 Meters
- Table XII Capable
- Year-Round Availability
- Artic Weather Capable



From the IPBC, Mounted Gunnery Tables to Convoy Live Fire and HIMARS/MLRS, the 30 Complex specializes in live fire training.





Joint Training Supported by CGJMTC

Urban Operations

Combined Arms Collective Training Facility (CACTF)

- 26 Buildings
- Force-on-Force (FoF) and Force-on-Target (FoT)
- Supports Blank Fire, Close Combat Mission Capability Kit and MILES System
- Underground Trainer
- 441 Ports for Human Urban Target Placements
- AAR Facility
- Rotary wing landing pad
- Soccer Field for Air insertion
- Rappelling capability
- Collapsible Structure

Home Station Training Lane Capabilities

- Counter Improvised Explosive Device (CIED) planning individual and collective training
- Specialized C-IED training for Route Clearance
- Maintains up to date knowledge on enemy Tactics, Techniques and Procedures and incorporates into collective unit training
- Virtually mapped out on VBS3



Nine different residential structures with a mixture of attics, crawl spaces and basements



The Home Station Training Lane (HSTL) continues to improve and remains one Camp Grayling's most flexible and diverse training facilities.





CGJMTTC 40 Complex

40 Complex Capabilities

- 2,781 acres of Duded Impact Area
- Small Arms up to MK-19
- AT-4, Javelin and Tow Inert
- Platoon Live Fire
- Joint Combined Arms Live Fire
- All Current Tube Artillery and Mortars (104 FPs) and Direct Fire
- Helicopter Door Gunnery, Fixed and Rotary Wing Aircraft Gunnery
- Aerial Live Bombing up to 500LBS
- R-4201A: Restricted Airspace up to 23,000 feet
- Restricted airspace up to FL230. Garland ATCAA connects to Alpena SUA Complex
- Proposed airspace changes add Grayling MOA's and R-4201B ceiling increase to mirror R4201A
- JTE co-located with GAGR for low altitude threat reactions
- 10 x hi-fidelity heated surrogate targets with strafe scoring available
- Weapons scoring capability on 5 targets, (4 tactical, 1 bomb circle)

Future Improvements

- Convoy Live Fire Lane
- Squad Defense Range
- Improved Direct Fire Points



Non-Standard Range Capabilities

- "Range 46" Company Live Fire Attack Lane
- "Range 42" Anti-armor, Rocket R&D familiarization range
- "Range 45" Combined Arms Defense Lane
- 3D modeling has been completed to assist in virtual training events



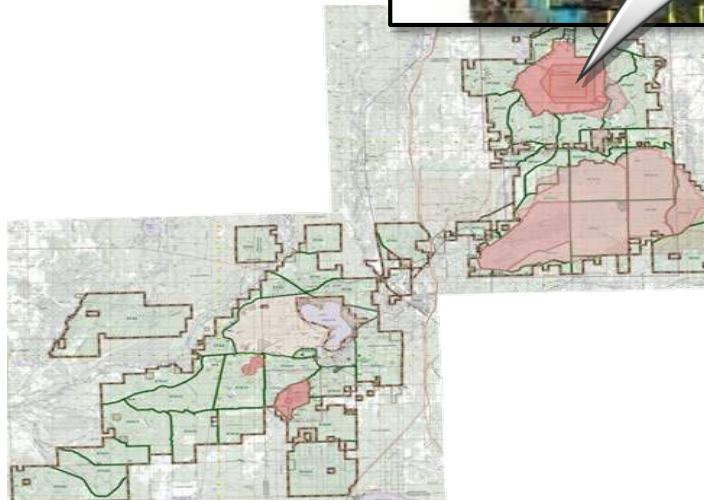
M777

- Total Firing Points: 72
- Charge 4H FP 704: 12,301 Meters
- Direct Fire
- Table XVIII Capable
- Year-Round Availability
- Artic Weather Capable



M109A6

- Total Firing Points: 72
- Charge 4H FP 704: 12,301 Meters
- 51 miles Maneuver Tank trails
- Direct Fire
- Table XII Capable
- Year-Round Availability
- Artic Weather Capable



The 40 Complex is a multifaceted, joint fires capable training range with a history of platoon live fire, CALFX, and Joint Training Exercises.





Initiatives and Future Capabilities

New Initiatives

- ✓ Partnership with Red Stone Arsenal
- ✓ 5G Capabilities
- ✓ 3x Fiber projects
- ✓ MPRC Instrumentation; August 2021
- ✓ Instrumenting Ranges/Home station Instrumentation Training System (HITS)
- ✓ Long Range Precision Fires capability
- ✓ Maritime targeting
- ✓ Air assault strip/austere runway
- ✓ 8,000 foot runway

DoD Partner Initiatives

- ✓ GVSC – Autonomous/Robotic Vehicle Testing
- ✓ WV-ARNG Paladins
- ✓ Winter Strike - SOF focus
- ✓ Northern Strike
- ✓ Maritime Strike
- ✓ DARPA Experimentation
- ✓ Air Force Research Labs
- ✓ Global Medic Exercise
- ✓ CSTX Integration
- ✓ GIDE 3



Orbital Effects imagery of Camp Grayling 40 Complex
Collection Date 29 October 2020

Industry Partner Initiatives

- ✓ BAE systems - main gun Stryker testing
- ✓ Orbital Effects - low earth orbit imagery
- ✓ Velocity Data Centers
- ✓ Project Relo - industry leader mentorship
- ✓ Airbus
- ✓ Lockheed Martin
- ✓ FLIR
- ✓ ORB Aerospace
- ✓ GLDS – General Dynamics mobile protected fire power
- ✓ Business leader round table
- ✓ SoarTech
- ✓ Microsoft
- ✓ Booz Allen MDK
- ✓ Persistent Systems

Future Capabilities

- ✓ Land-based maritime strike
- ✓ Cyber cross-domain integration
- ✓ Assault strip
- ✓ Space integration (LOE and Space Enablers)
- ✓ Network Expansion (Fiber, 5G, Data)



Integrated Logistics Support

CL I, II, III, V Sustainment

Warehouse

- Class I, II & V
- 109,072 heated square foot of storage
- 8,640 cold square foot of storage
- 117, 712 total square foot of storage

DLA Capitalized Bulk Fuel Site

- Class III
- 30,000 gal DF & JP tanks
- 20,000 gal DF (future plans)

Ammunition Supply Point

- Small Arms Ammunition
- High-Mobility Artillery Rocket System Multiple Launch Rocket System (CAT4-CAT1) Ammunition
- NATO Ammunition Capable



In 2018, Camp Grayling's Ammunition Supply Point issued over 1,000 tons of ammunition worth \$12 million



Lodging & Classrooms



Billets and Mess Hall



Classroom and Battalion Headquarters

- 8,000 Transient Bed Spaces
(3921 heated, 4079 unheated)
- 45 Mess Halls
- 41 Admin Bldgs
- 7 Maintenance Buildings
- 7 Class Rooms
- 2 Distance Learning Class Rooms



MATES Overview – Capabilities

Michigan's MATES is the 3rd Largest in the ARNG Inventory.

- ❑ 73 Acres of Secure Logistical Support Area
- ❑ 147,500 Square Feet and 125 Bays of Indoor Maintenance and Storage Area
- ❑ 6 Loading Dock Lanes
- ❑ Up to 120 Maintenance Technicians
- ❑ 7.5 & 25 Ton Overhead Lift Capability
- ❑ 2 New Classrooms for Up To 50 PAX
- ❑ CL IX 14,500 Square Feet
- ❑ CL III Retail (2 Lanes), 12,000 Gallons

Provides Multi-Compo / State / Service / National Support to:

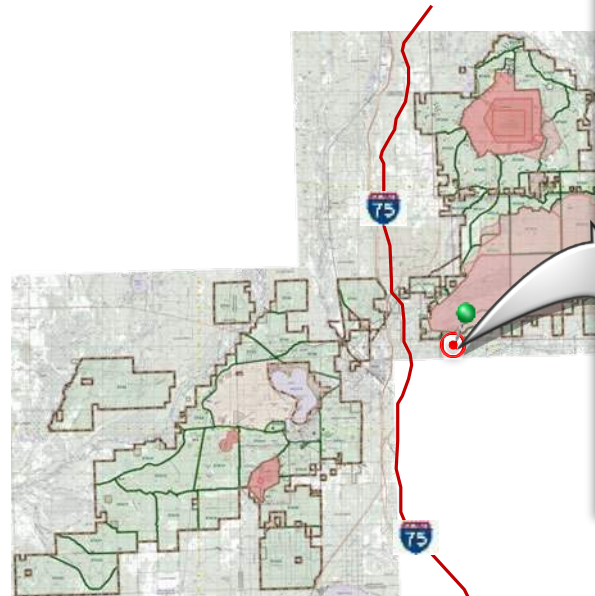
- ❑ Armor, Artillery & Engineer Equipment
- ❑ Missile, Electronics & Optics
- ❑ Armament
- ❑ Allied Trades Fabrication Capability
- ❑ TACOM and GVSC

Route Access to All CGJMTC

- ❑ Tactical & Administrative Movements
- ❑ Track Vehicle Route connecting MATES with the Rail Spur, range 30 & 40

Future Developments:

- ❑ 3 Additional Transient Repair Facilities
- ❑ Security Upgrades
- ❑ Robust Pooled Equipment Packages
- ❑ CL III Bulk / Retail (4 / 8) 60,000 Gallons





Environmental

- ❑ CGMTC environmental teams proudly partner with like-minded businesses, community groups, universities and other groups to monitor potential environmental factors and embrace innovative options for improving sustainability
- ❑ Sustainability efforts at Camp Grayling significantly exceed quality standards set by the EPA and other conservation-related groups.
- ❑ Research is funded by National Guard Bureau in order to update the Integrated National Resources Management Plan, which states the natural resources that are present within the camp, any conservation issues, and how resources will be protected



Soil near a Camp Grayling firing range is cleared of contaminants



This wood turtle has a radio transmitter epoxied to his shell so researchers can track his movements across Camp Grayling



Over A Century Of Creating Readiness

"Dominate All Domains"

Summary

- Largest National Guard Installation East of the Mississippi
- 7th Largest CONUS Army Installation
- 147,681 Acres
- 8,000 Bed Spaces
- Four Season Facility
- All-Domain Maneuver Training Capabilities
- Host to a number of Large Joint Training Exercises

"Camp Grayling is one of our nations best kept secrets...Camp Grayling has everything necessary to assist military leaders in developing trained, competent Soldiers for Joint operations."

-COL Scott Meyers, Garrison Commander 2020



Fox Company, 4th Tank Battalion battles the cold during Winter Break 18



True Joint Service All Season Environment

