North Korean Infiltration Tunnels and Clandestine Tunnel #4

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OUTLINE

• The Korean War: 1950-1953
• Terrain and Geology
• Tunnel Characteristics
• Discovery
• Military Significance
• Conclusion
Map of Korean Peninsula

June 25, 1950: NKPA Attacks
7 IN DIV, 1AR BDE
50% Attack along Uijongbu Corridor (Targets: Kaesong, Munan, Seoul)

June 28, 1950: Seoul Captured

July 20, 1950: Taejon Captured

Aug 25, 1950: MGEN W.F. Dean, CO of 24th IN DIV captured after evading NKPA forces for 36 days
August 1, 1950: Pusan Perimeter established

Consolidate defenses while NKPA logistical tether grows strained

United Nations Security Council debates involvement

Soviets walk out of Security Council; UN votes to intercede in Korea

September, 1950: UN forces attack; led by 1st Marine Division landing at Inchon; major breakout ensues

Counteroffensive operations
SEE-SAW CONFLICT

October, 1950: UN line established along the Han River

November 25th, Communist Chinese Attack across the Yalu River with approximately 9 Divisions (740,000 soldiers)

Six Chinese Offensives ensue, with UN forces and American counterattacks.

Seoul is captured twice, between December, 1950 and June, 1951.
May, 1951 Final Chinese Offensive; UN forces hold the line.
1951-1953 United Nations and North Korea engage in ceasefire negotiations while front becomes quasi-static
Bloodiest battles fought near the Iron Triangle over Key Terrain: Heartbreak Ridge; Punchbowl is 10km East
On July 25, 1953 the Korean War ceasefire is signed, establishing DMZ
Three basic Movement Corridors through the Peninsula: Eastern; Central; and Western
East: Rugged-Light Infantry
Central: Less Rugged-Light Armored
West: More Open, Heavy Armored Movement
Terrain typifying the western lowlands
Terrain typical of the central mountains
Terrain typical of the eastern mountains, which are very rugged
Geology: Created at converging plate boundaries. Metamorphic bedrock with large igneous granite and granodiorite intrusions. Formations trend northwest to southeast, with numerous faults. Plutonic rocks orthogonally jointed.
Fault Line Near Punchbowl

Metamorphic Migmatite
Locations of North Korean Infiltration/Invasion Tunnels 1 thru 4
<table>
<thead>
<tr>
<th></th>
<th>1st Tunnel</th>
<th>2nd Tunnel</th>
<th>3rd Tunnel</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Date of Discovery</strong></td>
<td>Nov. 15, 1974</td>
<td>Mar. 19, 1975</td>
<td>Oct. 17, 1978</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td>8km northeast of Korangp'o</td>
<td>13km north of Ch'orwon</td>
<td>4km south of Planmunjom</td>
</tr>
<tr>
<td><strong>Size</strong></td>
<td>Height 1.2m Width 90cm</td>
<td>Height 2m Width 2m</td>
<td>Height 1.95m Width 2.1m</td>
</tr>
<tr>
<td><strong>Depth from Surface</strong></td>
<td>45cm</td>
<td>50-160m</td>
<td>73m</td>
</tr>
<tr>
<td><strong>Total Length</strong></td>
<td>3.5km</td>
<td>3.5km</td>
<td>1,635m</td>
</tr>
<tr>
<td><strong>Length South of MDL</strong></td>
<td>1,000m</td>
<td>1,100m</td>
<td>435m</td>
</tr>
<tr>
<td><strong>Tunnel Lining</strong></td>
<td>Concrete</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td><strong>Troop Movement</strong></td>
<td>1 Regiment</td>
<td>30,000 Armed Troops Plus Heavy Guns and Equipment</td>
<td></td>
</tr>
<tr>
<td><strong>Projected Invasion Route</strong></td>
<td>Korangp'o-Ul-jöngbu-Seoul (Total 65km)</td>
<td>Ch'orwon-P'o-ch'ö'n-Seoul (Total 101km)</td>
<td>Munsan-Seoul (Total 44km)</td>
</tr>
</tbody>
</table>
Tunnel #3: Notice the rails for muck cars and water lines emplaced by the North Koreans
<table>
<thead>
<tr>
<th>Discovery: 24 DEC 89</th>
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</thead>
<tbody>
<tr>
<td>Agencies Involved: ROK Army and Geological Engineers</td>
</tr>
<tr>
<td>US Army Tunnel Neutralization Team (US TDA Unit)</td>
</tr>
<tr>
<td>416th ENCOM:</td>
</tr>
<tr>
<td>--Geological surveying and mapping to determine the character of the granite and granodiorite</td>
</tr>
<tr>
<td>--Geophysicists using moderate to high frequency seismographs to search depths between 100-500 feet and parallel to regional faults cutting the ridge</td>
</tr>
<tr>
<td>Depth: 145 meters</td>
</tr>
<tr>
<td>Support Structure: None</td>
</tr>
<tr>
<td>Size: Height- 1.6 meters; Width- 2.6 meters</td>
</tr>
<tr>
<td>Length: 2.5 to 3 kilometers from suspected start point</td>
</tr>
<tr>
<td>Slope: Average of 2.3%; High of 3.5% and Low of .01%</td>
</tr>
<tr>
<td>Construction: Drill and Blast method, estimated rate of advance was about 4 meters/day</td>
</tr>
</tbody>
</table>
View inside Tunnel #4
Geology of the Punchbowl along the DMZ: Igneous granodiorite surrounded by migmatite and metamorphic gneiss. Geologic feature is a basin; bordered by multiple faults and differential erosion.
Longitudinal section of Tunnel #4. Inspections could not proceed beyond the North Korean border.
SGT John Rogers of TNT. Credited with discovery of Tunnel #4

Seismograph data modeled
Discovery Methods and Techniques

ROK truck Mounted drill rig used on the old access road

Boreholes used in exploration for Tunnel #4 and the intercept adit constructed by allied forces

U.S. mobile (skid) drill rig used in the rugged steep terrain
German 3 meter diameter tunnel boring machine (TBM)
Rolla Scientists Who Helped Find Tunnel 4

Reserve MAJ Keith Wedge, 416th ENCOM Geologist; employed by Missouri Geological Survey

UMR Geophysics Professor Dick Rechtein, 416th ENCOM civilian geophysicist
References

• BG Keith Wedge, Provided personal pictures and was interviewed by CPT Mark Lavin on 17OCT02.
• Mehl, Thomas W. “Tunnel Neutralization Team,” KORUS Magazine, USFK May 1, 1990 (page 14.)
• Various ROK Propaganda Pamphlets
• http://www.fas.usda.gov
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