GEOARCHAEOLOGY OF WWII AIRCRAFT IN NEW MEXICO, USA

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INTRODUCTION

• A large number of aircraft crashes occurred in NM during WWII (1941-1945)
• Located throughout the state in different geologic settings
GEOLOGY & WWII AIRCRAFT INCIDENTS

- Crash site location
  - Mountains
    - Weather
    - Instruments
    - Training
    - Pilot error
  - Airfield location
    - Base of mountain front
    - Adjacent terrane
GEOLOGY & WWII AIRCRAFT INCIDENTS

• Preservation
  – Topography
  – Climate
VOLUME OF LOSS

Aiicrew losses
- USAAF – 52,173 deaths KIA, 35,396 other
- USN – 3,618 KIA, 8,515 other

Plane losses
- USA - >4,500 planes lost in Pacific War
<table>
<thead>
<tr>
<th>Year</th>
<th>USAAF Wrecks in USA</th>
<th>Fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1939</td>
<td>86</td>
<td>52</td>
</tr>
<tr>
<td>1940</td>
<td>100</td>
<td>90</td>
</tr>
<tr>
<td>1941</td>
<td>228</td>
<td>199</td>
</tr>
<tr>
<td>1942</td>
<td>1,259</td>
<td>1,096</td>
</tr>
<tr>
<td>1943</td>
<td>3,854</td>
<td>4,209</td>
</tr>
<tr>
<td>1944</td>
<td>5,387</td>
<td>5,616</td>
</tr>
<tr>
<td>1945</td>
<td>3,264</td>
<td>3,799</td>
</tr>
<tr>
<td>TOTAL</td>
<td>14,197</td>
<td>15,041</td>
</tr>
</tbody>
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AIRCRAFT CRASHES IN NEW MEXICO

Aircraft Crashes in New Mexico, USA

Crashes
After Pearl Harbor, need several thousand air crew trained per month

Training all over US

CA-AZ-NM-TX preferred
- Climate: flying days
- Geology
  - Only locally mountainous
  - High altitude
- Broad analogy to Pacific: mountain “islands”? 
WWII AIR BASES IN NM

• Second Air Force
  – Alamogordo AAF
  – Clovis AAF
  – Kirtland AAF

• Army Air Forces Training Command
  – Carlsbad AAF
  – Deming AAF
  – Fort Sumner AAF
  – Hobbs AAF
  – Roswell AAF
AIRFIELD ACCIDENTS

• Large number of largely non-fatal (and some fatal) crashes occurred at/near airfields

• 115 incidents from 1942-1945 at Alamogordo Army Air Field
Trail Peak B-24

THE LAST FLIGHT of LIBERATOR 41-1133

William F. Cass

The Lives, Times, Training & Loss Of The Bomber Crew Which Crashed On Trail Peak At Philmont Scout Ranch
Trail Peak B-24

- April 22nd 1942
- B-24D Liberator
- Bad weather, one engine off
- Trail Peak near Cimarron - Philmont Scout Ranch.
Trail Peak B-24

North Baldy Peak B-17
North Baldy Peak B-17

- October 15th 1942
- B-17E Flying Fortress
- Night flight training
- Struck North Baldy Peak near Magdalena
- 75 feet below summit
- Pilot error?
North Baldy Peak B-17

http://socorro-history.org/HISTORY/PH_History/200701_b17.pdf
El Malpais OA-10

- National Museum of USAF
El Malpais OA-10

- August 1\textsuperscript{st}, 1945
- USAAF Consolidated OA-10 (Army name for Navy PBY-5A Catalina flying boat)
- P-51 Mustang near Tucumcari reports engine smoke
- Crashed in El Malpais NM
- Feathered one propeller (indicating engine failure)
El Malpais OA-10
Other losses

- Crashes in diverse terranes all around NM – Great Plains, Rio Grande Rift etc.
- Small number of crashes were terrane independent
  - aircraft disintegrated at altitude
    - B-17F east of Rio en Medio on January 1\textsuperscript{st}, 1943
    - B-17E on August 23\textsuperscript{rd} 1942 near Las Cruces
  - Mid-air collisions
    - Cessna AT-17 and an AT-17B on January 10\textsuperscript{th} 1943 near Roswell
SUMMARY

• About 1400 aircraft crashes in NM 1941-1945
• Geologic factors influence:
  – Location
  – preservation
• Large dataset for analysis and provide model