The last flight of *Texas Tornado*

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Flying fortress crash site

USAAF B17E Flying Fortress 9 June 1942

- In NZ on secret mission
- Crashed soon after take-off at night
- Caught fire on impact, 500lb bomb exploded, then 26,000 litres of fuel
- All 11 occupants killed, neighbouring house/farm buildings severely damaged
- Casualties buried at Waikumete Cemetery and remains repatriated post-war
- Large wreckage removed, rest bulldozed into bomb crater [eye witness]

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Crash site management

- Site apparently undisturbed but development imminent
- Previous reports of finds of human remains & munitions (post clearance) at site
- Protection by scheduling not feasible
- Negotiated consent conditions providing for prior investigation/monitoring before development
- Located archaeologists willing to lead project voluntarily. Owners contributed machinery & other support. Team of ca 15 volunteers did work
- Liaison with current owner (NZRPG), US Consul, US Defense MIA Unit, Ministry for Cultural Heritage, Auckland Museum, NZ Air Force, Local Board….

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Objectives

- Locate and undertake a controlled excavation of infilled bomb crater to allow identification and recovery of any further human remains, personal items or definitive crash relics
- Determine if any unexploded ordnance or contaminants present
- Make a record of the site before it was destroyed

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Infilled crater located by ortho-rectification of aerials, probing and test pitting

Artefacts

- Top of crater fill – artefacts associated with crash clean-up; damaged farm/house items (fencing, roofing, tree limbs etc)
- Numerous aircraft components. Duralumin (structural aluminium alloy) badly corroded, some melted.
- Rubber & fabric items (incl ‘Mae West’ lifejackets), ?seat material.
- Many small items, buckles etc.

Sealed bottle Iodine from Med kit?

Ammunition – lots, but all had exploded during the fire

Mostly heavy machine gun; also light machine gun & side arm calibres

Bullet/puncture -proof rubber fuel tank (burnt remains)

Personal Items

Lieutenant's Bar
(Navigator?)

Sidearm Holster
(Front Cover) Left?


USAAF Boot Possibly Model A-6A

Bomb Fragments

- Bomb Fragments at bottom of crater
- Number engraved '..36B6'
- Possible model AN/M43?

Crew loading 500lb bombs in Australia 1942


Finished
9/5/2017

Outcomes of site investigation

- No human remains found during excavation. All earlier reported finds followed up to check if any locatable
- Contamination not significant, but strong fuel smell in base of crater
- Personal/uniform items to be repatriated to US MIA unit
- In discussion with Auckland Museum regarding other items
- Analysis/report in prep. (by volunteers)
- Land owner receptive to memorializing event at/near site
- Open days and TV1 News item, conference poster
- Site of tragedy treated with respect and in accordance with wishes of US Consul & Defense Dept.
- Very positive feedback, including from owner
- No cost to Auckland Council other than some staff time - several HU staff worked voluntarily

Crash site investigation was about doing what was right rather than what we were required to do. No agency has any responsibility for such sites

Cause of the crash

- Aircraft reached an altitude of around 150’ (50 m) then began to descend and struck rising ground before coming to rest around 2.6 km beyond the end of the runway

- Outcome of inquiry: pilot error. Contributing factors: changeover from flying by landing lights to instrument flying; lack of familiarity with terrain

- Board of inquiry was unfamiliar with aircraft & its controls

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Cause of the crash

Aircraft: Well regarded and capable aircraft. No evidence any faults contributed to crash

Environment: Night, but fine and clear conditions

Pilot: Very experienced, had landed at Whenuapai recently, inspected runway the day before

but….

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Cause of the crash

- Pilot and co-pilot had spent the evening socializing in the Grand Hotel, Princes Street. Arrived in taxis with women at midnight
- *They…had been enjoying themselves, although they were still perfectly capable of flying the machine* (eye witness)
- Took off without undertaking pre-flight checks. Did not test control surfaces (ailerons, elevator, rudder)

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Cause of the crash

- Complex aircraft to fly
- Prototype of B17 crashed due to failure to disengage gust locks
- Can be difficult or impossible to disengage after take-off and situation may not become apparent until too late
- Written pre-flight checklists introduced

APPROVED B-17F and G CHECKLIST

REVISED 2-1-44

PILOT'S DUTIES IN RED

COPILOT'S DUTIES IN BLACK

BEFORE STARTING

1. Pilot's Preflight—COMPLETE
2. Form 1A—CHECKED
3. Controls and Seats—CHECKED
4. Fuel Transfer Valves & Switch—OFF
5. Intercoolers—Cold
6. Gyros—UNCAGED
7. Fuel Shut-off Switches—OPEN
8. Gear Switch—NEUTRAL
9. Cowl Flaps—Open Right—OPEN LEFT—Locked
10. Turbos—OFF
11. Idle cut-off—CHECKED
12. Throttles—CLOSED
13. High RPM—CHECKED
14. Autopilot—OFF
15. De-icers and Anti-icers, Wing and Prop—OFF
16. Cabin Heat—OFF
17. Generators—OFF

STARTING ENGINES

1. Fire Guard and Call Clear—LEFT Right
3. Master Switch—ON
3. Battery switches and Inverters—ON & CHECKED
4. Parking Brakes—Hydraulic Check—On—CHECKED
5. Booster Pumps—Pressure—ON & CHECKED
6. Carburetor Filters—Open
7. Fuel Quantity—Gallons per tank
8. Start Engines: back magnetos on after one revolution
9. Flight Indicators & Vacuum Pressures CHECKED
10. Radio—On
11. Check Instruments—CHECKED
12. Crew Report
13. Radio Call & Altimeter—SET

ENGINE RUN-UP

1. Brakes—Locked
2. Trim Tabs—SET
3. Booster Turbos and Props
4. Check Generators—CHECKED & ON
5. Run up Engines

BEFORE TAKEOFF

1. Tailwheel—Locked
2. Gyro—Set
3. Generators—ON

AFTER TAKEOFF

1. Wheel—PILOT'S SIGNAL
3. Power Reduction
3. Cowl Flaps
4. Wheel Check—OK right—OK LEFT

BEFORE LANDING

1. Radio Call, Altimeter—SET
3. Crew Positions—OK
3. Autopilot—OFF
4. Booster Pumps—On
5. Mixture Controls—AUTO-RICH
6. Intercooler—Set
7. Carburetor Filters—Open
8. Wing De-icers—Off
9. Landing Gear
   a. Visual—Down Right—DOWN LEFT Tailwheel Down, Antenna in, Ball Turret Checked
   b. Light—ON
   c. Switch Off—Neutral
10. Hydraulic Pressure—OK Valve closed
11. RPM 2100—Set
12. Turbos—Set
13. Flaps ½—½ Down

FINAL APPROACH

14. Flaps—PILOT'S SIGNAL
15. RPM 2200—PILOT'S SIGNAL

Conclusions

- Cause of the crash unable to be determined. Alcohol likely a factor, but needs to be viewed in context – wartime, different standards prevalent then
- No evidence of alcohol on board as later suggested
- Crash investigations were not as rigorous, complicated by status of aircraft
- Surprisingly inconsistent evidence from witnesses
- Possible that there are additional crash remains at the site or in the landfill

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Memorial at similar crash site in Arkansas – full size replica, wall of remembrance, shrine…

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