

# Pilot's Testimony of Grumman TBM Avenger N337VT Crash at Fort Apache Mountain Range

May 5, 2018

Written by: Ron Carlson - Owner & Pilot



## Present Location:

Approximately 30 miles south of White River Indian Reservation



## **THE AIRPLANE - 1945 GRUMMAN TBM AVENGER 3E - N337VT**

The TBM Avenger is a war plane that was used extensively in the Pacific theater during World War 2. The TBM has positions for 3 crew members: Pilot, Rear turret-gunner and Radioman/bombardier.

The TBM has three fuel tanks. Each wing contains one tank at 90 US gallons, located near the fuselage at the wing root. In addition, there is one center tank that holds 140 gallons. Total fuel equals 320 gallons. Total endurance range is approximately 3.5 hours, depending on power settings and altitude factors.

Fuel required is 100 low-lead octane fuel. The burn rate is approximately 130 gallons per hour during take off, 100 gallons per hour during climb, and 70 to 80 gallons per hour during cruise.

The engine is a Curtis Wright 2600–20 Cyclone engine. 1900 horsepower. There are two rows of seven cylinders each.

This engine is designed to burn approximately 1 gallon of W120 weight oil per hour. Sometimes, depending on engine tuning and/or power settings, the engine burns a higher rate of oil. The oil tank holds 32 gallons.

### **2018 WORK ON THE AIRPLANE AND PREVIOUS FLYING**

I had purchased the Grumman TBM Avenger N337VT in early 2017. The TBM was delivered via cargo ship from Brisbane, Australia to the docks of Long Beach California in the fall of 2017. After US Customs was approved, the TBM was delivered by truck to Long Beach Airport (KLGB). There it was completely serviced and then a ferry permit was granted by the local FSDO for me to fly the TBM to Stockton California (KSCK). I then flew the TBM to KSCK. There it was to receive all the service and maintenance it would require, and also received some additional cosmetic work. Then I would fly it back to Chicago in Spring 2018.

While at Stockton airport, the TBM was re-certified into the LIMITED category (no night flights, no IFR).

In addition the TBM received the required maintenance, the 2018 “ANNUAL”, re-registration to the United States, and recertification in the “LIMITED” category. This was done at Vintage Aircraft at Stockton Airport (KSCK). After the required maintenance and required paperwork was completed, I flew the plane in the vicinity there. Further cosmetic work was executed to the TBM, which included propane/oxygen simulated forward firing wing machine guns, work to the rear machine gun turret and very extensive work to the radio room, with a large quantity of vintage radio and control equipment added.

I finally departed Stockton on Wednesday, May 2 with the destination of Torrance Airport, but was unable to make Torrance because of weather with low ceilings moving rapidly into the overall LA area. So I diverted and landed at Bakersfield Municipal Airport (L45) and stayed overnight there.

The next morning, on Thursday, May 3, I departed (L45) and flew to Torrance Airport (KTOA). The TBM remained parked at Torrance Airport until Sunday, May 5, 2018.

### **JUST BEFORE THE VOYAGE FROM CALIFORNIA TO ILLINOIS**

On the morning of Sunday, May 5, 2018, an overall flight-plan was reviewed by Ken and myself at breakfast. Ken is my friend, also a pilot. He was to accompany me on the journey home and fly in the middle seat. The plan consisted of multiple flight legs starting with a departure from the LA area of California and ending in the Chicago Illinois area. We were taking a “southern route”.

On the first leg of the flight plan (Torrance to AK-CHIN) I checked the oil at 26 gallons. I had added 3 gallons while at Torrance Airport. We departed with full fuel and 29 gallons of oil, more than enough for one of each 2 hour leg. No flight was planned much more than 2 hours, so easy to add oil if need to keep the tank topped off.

On Sunday, May 5, 2018 at approximately 9:30AM, we planned to depart Torrance Airport. Prior to departure, I gave Ken a full walk around of the airplane and performed the written preflight checklist together. He was to become a crew mate. In addition, I gave Ken a full briefing of where the emergency gear was located (the stowage tunnel behind the middle seat location, where a life raft was typically located on the original Grumman design) and how to access and remove it.

The emergency gear included one month's supply of energy food bars for two, 48 bottles of water at 16 ounces each, one fully charged satellite phone with active Sim card, with fully charged second battery spare, one portable ELT (ACR 2881 ResQLink+ PLB Floating Personal Locator Beacon), which was fully serviced with new battery two weeks before.

In addition there was a large survival gear bag that was packed extensively, which included (but not limited to) two small plastic pup tents, emergency blankets, water purification, fire starting matches, fire sustaining fuel bricks, medicine and bandages, knives, compass, signal mirror, strobe lights, flashlight, snake bite kit, and all the other typical survival necessities.

Then I oriented Ken with the middle seat, which he was to occupy. I explained how the canopy opened and closed and where the red release knob was located in case he would need to bail out, in order to jettison the the “greenhouse glass” canopy. I also pointed out the communication systems, the navigation systems, and four point restraint harness located in the seat.

I then further discussed in detail how the parachute worked; how to get in it, where the straps were to tighten it if a jump was imminent. I had told Ken to watch certain related videos from the parachute manufacturer prior to the trip, which he did watch. I also explained about the techniques to exit the airplane, especially to make sure to duck and dive low off the wing before letting go in order to minimize the risk of being hit by the tail of the airplane.

Then I had Ken sit in the seat, strap on the parachute, strap on the four point harness. Once Ken was situated this way, I had Ken go through a partial process of a mock emergency by having him quickly pull all straps tight to simulate an actual emergency.

## **VOYAGE FROM CALIFORNIA TO ILLINOIS**

On the first leg of the voyage, I planned to land at an airport near Phoenix, south of Phoenix. I chose (A39) AK-CHIN based on good fuel pricing. (This information is all shown real-time on Foreflight navigation database which is updated constantly).

The initial attempted landing at (A39) was not smooth and not with full runway centerline directional management, so I aborted the landing early with a go-around. The second landing was smooth and successful. Refueling and checking the oil took place. No oil was added or required to

be added, but the fuel tanks were all topped off full. Taxi out and normal run up did not yield anything out of the normal. (Note - It was very hot, approximately 90 degrees or higher on the ground. It was more difficult to start the engine than normally).

The TBM climbed normally, at 800 to 1000 ft./m. I climbed to approximately 11,500 feet, which is a normal east-bound VFR flying altitude level for that direction of flight. An approaching north/south continuous mountain range had to be crossed. The lowest initial altitude on the continuous ridge line rose from 7 to 8000 feet MSL. The plan was for us to stay as high as reasonably possible - to cross over at 11,500 to 12,000 MSL for:

- (1) Safety of highest safe altitude (no oxygen on board).
- (2) Maximizing ground speed based on tail winds.

My plan for this particular leg was to fly a slightly winding route that would pass near the following airports in succession, in this order off the main direct flight path to Albuquerque, New Mexico:

Fly just north of (P13) San Carlos Apache Airport,  
Then  
Fly just south of (E24) White River Airport

Then aim to angle south of the direct route to KAEG to avoid the highest mountain terrain - towards just north west of (13Q) Jewett Mesa Airport.

Then on to the initial final leg destination - (KAEG) Albuquerque Airport.

Based on in-flight calculations, there was a yield of favorable tailwinds, and with the normal fuel consumption, I changed the destination from (KAEG) to an airport a bit more distant - Las Vegas Municipal Airport (KLVS).

## **THE ACCIDENT**

The TBM was flying level at 12,000 feet crossing the beginning of the most mountainous part of the entire voyage from LA to Chicago, with the highest mountain peaks and high ridges. My plan was to slightly deviate from the

direct route to (KAEG) all along the way as required to cross over terrain no higher than 8000 to 9000 MSL. I was starting to angle more southerly towards a position 10 miles northwest west of Jewett (13Q) when there was a large bang that came from the front of the TBM. The first two things that I perceived immediately was very heavy gray smoke emanating from the top and top-sides of the engine cowling - and a very violent shaking from the front of the TBM. Both all at once.

The smoke was coming out the top and side airflow ports at the rear of the engine cowling. I had then presumed obviously that there was a major engine mechanical failure. Airspeed was already dropping rapidly, the TBM was already descending, which signified that the engine was not producing very much thrust anymore at cruise power. I then pulled back the throttle to just above the idle position in an effort to reduce the fire and smoke. (I did not initially observe any fire, but Ken did from his vantage point). After reducing power significantly, there seemed to be no reduction in smoke. I could see slightly in front of me. No smoke in the cockpit, just in the entire airstream surrounding the cockpit.

Then I logically brought down the nose slightly to maintain airspeed. I simultaneously looked out and down again to left and right for landing locations. (always looking, and at this stage I was on red alert because there seemed no where to land for the last 10 minutes). The airplane had now dropped to probably approximately at (or just above) 3000 feet AGL and still descending. The ridge line we were over was approximately 8000 MSL.

There was only one possible off field landing location - on the starboard side. But this terrain looked questionable, looking through the smoke coming from the front. From 15 years of bushpilot experience in Canada and the High Arctic, I know a little about judging terrain. This is critical for seaplane and tundra tire landings. I had previously made 2 successful deadstick landings, one of which was on floats onto tundra, with no damage to airplane either time. But this seemed like a 50/50 at best to not end up in a situation with the plane flipping over or worse.

The open terrain looked like a marsh with water in the center, surrounded by large trees. Significant water this time of year in spring. The marsh

seemed long enough to execute a wheels up landing, but being unsure of the context of the terrain (water, muck, mud or worse, and - was it flat or did it slope down with the mountain?) and with thicker and thicker smoke coming from the engine area, forward visibility was already very much in question. The smoke was increasing. My initial thought was "what if the smoke got worse to where forward visibility was zero?" The airplane was now probably 2500 feet AGL and still descending. Still time to bail. Not at the point of no return. Many questions in so few seconds.

So with the two factors of questionable terrain and worsening forward visibility, and coupled with Ken's willingness to jump (Ken voiced this unsolicited on the intercom), I made a final decision to abandon the TBM in the air.

*(Note: Ken later testified that there were sheets of oil spilling out the right side. Not a continuous flow, but continuous interval of sheets of oil).*

## **BAIL OUT**

Intercom intelligibility was sporadic. Maybe it was the increased background noise. (We could barely understand each other in normal flight, inherent with this airplane and configuration). I hand signaled back to Ken to bail out. In seconds Ken was out and gone.

At this time the TBM was down to probably just above 2000 feet AGL.

*(Note: I was unaware that, although Ken did exit the middle seat position from the airplane, he in fact climbed down hand over foot and kneeled on top of the wing, but did not jump off. In later testimony, Ken said that he grabbed the recessed hand grip on the side of the fuselage and, while then laying on his back, he rode on the wing root on his back, while his legs were hanging over where the split flaps are located, into thin air. It was only until I banked the TBM in the right turn, that Ken finally let go and fell, just missing the tail coming over above him).*

Smoke was getting pretty thick now. I could not see forward very much at all. On instruments, I pulled the nose up 20 or 30 degrees and turned the

TBM into a climbing 70° turn to the right. As I was doing this I thought to myself: “Are we really going to do this?” That didn’t cause hesitation, but I did say it to myself. It was like I couldn’t believe what was happening, and what was going to happen.

I then bailed out, also successfully avoiding being hit by the tail. Bail out altitude was probably somewhere below 2000 AGL.

I was fully aware and lucid during every second of bailing out. I remember every microsecond. I recall vividly growling out loud and a surge of adrenaline pumping, helping me get out of the cockpit. I remember that it was very hard to pull myself out, even though when I had the plane in the climbing turn I felt somewhat weightless in my seat. The slipstream was strong. I don’t know how Ken had held on. I remember my legs coming out last, and once breaking free, I instinctively put myself in a cannonball position and closed my eyes, waiting for the elevator or rudder to smash me in the back. After about one second, I opened my eyes and I was looking straight up at the sky in the most surreal and peaceful free-fall. The first thing I saw as I was free falling was the blurred shadow of the TBM tail practically going by. Of course my right hand was already grasping for the silver D ring to the ripcord. As I pulled, I did also use my left hand to push, as I had learned. I knew I was low and I had to get this thing pulled as fast as possible.

I was in the wrong position facing up, falling on my back. I didn’t think I had time to put my arms out and try some rollover maneuver. I didn’t know where the ground was, but I assumed it was close. After I pulled the D ring, I did clearly observe the pilot chute deploying, then the telltale violent shock of the main chute opening. It felt as if I hitting a brick wall. A massive huge shock to the body, but a calming and relieved feeling.

I was already coming down near the top of trees, and they were coming up fast. I had just a few seconds it seemed to look to my right and I saw Ken floating down successfully in his parachute, almost the same level, not more than a quarter mile away. Biggest relief. He was very close to me considering that we were in two completely separate bail outs. I last looked to my left for the TBM, but saw no sign of it.

*(Note: we dropped close together because, as stated earlier, Ken had stayed with the TBM until I started the hard climbing turn, which was just a few seconds before I bailed out. Ken later testified that he watched my parachute open, and then saw the TBM eerily start to level itself out, remaining in a somewhat gentle turn, while still maintaining a gradual descent).*

I was then just above the tree tops and coming in fast, so I crouched in a landing position with my knees bent just before hitting the green canopy. At first, as I crashed through the branches, the treetops seemed to slow my descent, but then the parachute apparently collapsed, because it seemed I then went into a free-fall for the last 20 feet or so.

I remember hitting the ground very hard on my legs and back, rolling backwards and then hitting the back of my head extremely hard on the ground. I was wearing a premium WW2 replica vintage kevlar helmet and this saved my head. I was dazed at first, but solidly on the ground. After a few seconds I started to unbuckle myself from the harness. I tried to assess my injuries as best I could. I didn't hurt that much yet. (in parentheses - x rays and prognosis from hospital):

- (1) Sprained or fractured left ankle (severe ankle sprain).
- (2) Chest hurt (broken rib).
- (3) Back hurt (strained).
- (4) Neck hurt (strained).
- (5) Nose bleeding.
- (6) Right elbow hurt (strained).
- (7) Cuts and contusions (multiple on face and body).

*(Note: Ken landed at about the same time and was stuck 20 to 30 feet up in a tree for several minutes. Reaching for another tree that was leaning, Ken fell with the tree to the ground below. Ken sustained a major facial injury to the left side, with a heavily bruised eye and cheek, with broken cheekbone. Ken also sustained a bruised or fractured wrist).*

## **SEPARATED IN WILDERNESS / SEARCH TO FIND HELP**

I then assessed what I had within my possession. Apart from the parachute and helmet, I had on my pilot flight suit, my shoes stayed on, one cell phone and one wallet. My small notebook pad was laying 10 feet away with the broken velcro leg wrap, but pen was missing. In retrospect it would've been easy to put a cigarette lighter, knife and a small flashlight in my breast pocket. Further insight would've been to take the satellite phone and/or the portable ELT that I had placed in the TBM emergency life-raft tunnel, and instead zipped those into my leggings. Maybe even add in a bottle of water for good measure. But future pilots can take this advice to better use.

I hiked in the approximate direction from where I thought I had last seen Ken when he was in his parachute descent. I spent about an hour calling and searching for Ken, without success. I returned to the location of my parachute. I tried to pull my parachute out of the tree but I was unsuccessful. (a good tool for SOS and also use as a blanket at night). This is where a knife would have helped.

I started to hike parallel to the mountain and after a short distance, there was a small clearing in the trees. At the other edge of the clearing crossed an old logging trail. The trail was heading up and down the mountain. I hiked up the mountain ridge trail and followed it for two hours to its end in order to try to get a cellphone signal. Before embarking on the hike, I had placed white notebook paper on flat rock with a stone on top in the middle of the trail. I also put white paper in a small pine tree sapling next to the trail. Further, I drew arrows in sand at certain points, in several locations, showing my direction of travel on logging trail. Maybe Ken or someone else might find it.

I hiked to the top of the mountain ridge and got one bar signal on cellphone, but no matter what, I could not get any texts or voice calls out effectively. Left ankle was now swelling up, painful. Now hobbling.

At that point I was getting very dehydrated, had to find water or any other hydration source. Mouth completely dry. I started the march back down the mountain ridge, back to original drop location. On the way, I was able to chase down, trap and successfully consumed (mostly just the outer part) of

a small frog type looking lizard for food source. (I learned today from a friend that lizards typically carry salmonella. So I wouldn't recommend that in the future).

I then made it back to where I had originally landed. I searched and called for Ken a little more, but then figured he was either unconscious or worse. So my first thought was that I really needed to find search and rescue people ASAP to help to find Ken. With growing left ankle pain, hobbling, I now couldn't walk too far without long rests. I was thinking if I could find help, I could at least guide the search effort to save Ken. I wasn't going to be able to do it myself now.

The primary mission now was to find water. My upper back was really starting to cramp up. In the afternoon that day was in the 80s and very dry. Air thin to breath at 8000 feet. If I could get down the mountain, there were good odds to find a stream. Unfortunately for me, I normally get dehydrated rapidly, so I knew this was the most important thing.

I hiked down a couple of more miles down the trail. I saw no other footprints. Not a good sign for what may have happened to Ken. It started to get dark, so I needed to make as best of a bedding location as possible, figuring that the temperatures that high up in the mountains would get very low at night. In the meantime, I was starting to cramp up some more from initial dehydration, now it was one of my legs.

Just before dark, I stopped hiking and off the trail I found a small stand of young pine trees. I made a pine-needles bed and a pine-needles pillow, and in addition broke down a number of pine-bough branches to use as a makeshift blanket covering, all for protective insulation.

It was a long night. The temperature dropped to the 40's. The pine needles and boughs definitely took the edge off, but no sleep whatsoever. I couldn't really lay still for any position for more than 15 minutes because of (what I found out later to be) a broken rib and back and neck strains. I then drank my own urine (in survival study, you can do that one cycle effectively) so as bad as that tasted, that that helped bring the cramping down to get through the cold-night ahead and subsequent further marching.

At 3 or 4 AM, the moon came up and I decided to get up and start walking down the mountain again, using the moonlight. Badly needed to find water.

Often stopping in the dark to look around and listen, I finally stopped and heard what sounded like water, like a small babbling brook or something. It was to the left side of the trail down the mountain. So I walked off the trail and slid on my back down the mountain side, over rocks, logs and other things - to get closer to the sound.

Amazingly to then stumble upon a big gravel road. That was a great sign of hope. Not only water - but a real road. I went across the road, then lower and down by the creek...and then feeling my way in the dark to the sound of the water. I laid down and drank as much as possible. Now I knew the odds were in better favor of getting out. A person can last for many many days without food, but not water.

Still very cold I then had to pick and construct another bedding location. This one was not nearly as good. I stayed there by the creek for another 4 hours until the sun was starting to hit parts of the road. I then hobbled up the road to where the sun was. I sat basking in the sun to try and warm my body up.

## **REUNITED**

Within 5 minutes of sitting in the sun, Ken came crashing down the same hill and popped out onto the road. He said he saw the signs on the trail (the arrows and papers). He found the same trail and also knew best to come down the mountain. Biggest relief. Both alive and relatively well. Ken's main injuries included a very banged up left side of his face, and sprained or fractured wrist.

We both decided to take the road and go a certain distance up the mountain. After going a small distance up the road, a decision was made to reverse course and go the other way, which was leading down the mountain. What we didn't know was that this gravel road lead some 25 miles down the mountain finally to a paved road, which would lead to a nearest town called White River (Indian Reservation).

I was hobbling pretty slow at this point, and suggested to Ken to go ahead a few miles. If he didn't find anything, to come back. That under any circumstances, we must not be separated. 2:00 PM was to be the latest rendezvous time.

## **HELP FOUND**

Ken was gone about an hour, and I was starting to again become dehydrated, so I decided that the safest place was back at the creek. I started making my way back. As I was laying on the side the road taking a rest, a truck came rumbling around the corner with 2 men - with Ken.

Ken had found a logging crew's pick up truck and as he was searching for the keys, the two men came up. One of the men had a radio.

They radioed to town, so an ambulance was being sent. In the meantime, within 15 minutes, three trucks of first responders arrived. They administered good care of us.

We rode in the back of the pickup truck down the mountain halfway to the entrance, and there were met the ambulance, which was slowly making its way there.

Then we all went down the rest of the mountain in the ambulance on the trail and to the hospital. Staff worked diligently on us all afternoon. Police and Rangers arrived asking questions. Also FAA and NTSB on the phone. Then we were checked out of the hospital. One of the nurses gave us both a ride to check into a hotel nearby.

When in cellphone service in the ambulance, we both called our wives. They both together flew to Phoenix on the next flight and then drove 4 hours through mountains and canyons of highway in the dark to meet us at the hotel at 12:30AM.

We all drove out late the next morning back to Phoenix, and caught a flight home.

End.



### **UPDATE:**

It has just been reported by the local Indian authorities that it does not appear that there are any more searches going on. They stated further that the area is recently or now closed due to the drought, so there are “not many people allowed in the area”. They expect that once fall arrives, they will reopen the area for hunting and hopefully locate the aircraft. They advised that if the TBM is located, they will notify us right away.

### **Local Agencies - Contacts**

Carlos Valdez - White Mountain Tribe (state)

[REDACTED]

Wayne Amos (White River law enforcement)

[REDACTED]

[REDACTED]

Nate Powers  
Forest Service

[REDACTED]

Game and Fish

[REDACTED]

Seth Magrid  
Starr Adjustment Services

[REDACTED]

Gary Hendrickson  
FAA

[REDACTED]

Price Noreen

NSTB

