

AN RA-3B on a logistics/passenger flight experienced double engine failure, suspected to have been the result of a fuel system malfunction. While the pilot performed NATOPS relight procedures, the P/N (photo-navigator) transmitted Mayday calls. Relight attempts were unsuccessful and the pilot ordered bailout as the aircraft passed through 10,000 feet over heavily wooded, hilly terrain in hostile territory.

An enlisted passenger was the first to exit, followed by a civilian contractor tech rep, the P/N and finally the pilot. Both the enlisted man and the P/N landed safely on the ground but the parachutes of the tech rep and the pilot were caught in tall trees. The tech rep, who was only about 12 feet above ground, managed to swing over to a tree trunk, wrap his legs around it, unhook his harness and slide safely to the ground. The pilot, however, was suspended 30 feet above rocky terrain. He did not reach the tree trunk and there were no large trees near enough for him to swing to. For the better part of an hour he hung suspended in his torso harness, unable to stand the pressure any longer, he swung from a small tree nearby and released his koch fittings. The man bent under his weight and he fell through the bushes to the rocky ground, suffering a broken left arm and a sprained right one.

The P/N's pre-bailout Mayday calls had initiated an intensive SAR effort and within a few hours the four men were located and rescued. Only the P/N and the pilot had two-way survival radios. The SAR report stated that the pilot came up on guard but because he was in a deep valley, radio contact was limited to those times when search aircraft passed by one end of the valley. The tech rep's URT-33 beacon attracted search aircraft to his position and the enlisted man was located visually.

The P/N's narrative of his bailout and survival experience conveys his feelings as he waited in hostile territory for rescue. We pick up his story as the crew prepares to bail out.

"We seemed to be losing altitude much too fast," he begins... "By this time the pilot had ordered us to prepare for bailout. When I put on my oxygen mask I had VCS and UHF capability so the pilot transmitted the final Mayday with our bailout intentions and stated that four persons were involved. I finally disconnected my oxygen mask and resumed use of my boom mike so that I could continue to communicate with the crew.

"At about 12,000 feet the pilot attempted one final simultaneous relight of both engines with no success. He asked for me to blow the door open. I also vaguely remember transmitting a last message that we were passing 10,000 feet and preparing to bail out. The pilot then yelled over the horrendous noise of the RAT and



the open hatch to 'remember to pull your D-rings.' I released my seat pan and parachute and pulled my green apple (emergency oxygen release), lowered my visor and turned to watch the tech rep and enlisted passenger go. The enlisted man hesitated but on seeing our gestures, simply fell forward out of the hatch. He hit his forehead with tremendous force on the lower escape chute but his helmet was apparently well-secured and protected him. I was very concerned about his baro-release system and was quite relieved to see his parachute open after I bailed out."

(NATOPS calls for bailout from the RA-3B to be made feet first, facing aft, legs together, arms tight to the body and head turned to the side. Hands should grasp the torso harness at the D-ring. — Ed.)

This was the enlisted man's first flight in an A-3. When the emergency arose, the tech rep, a former Marine with more than 200 hours as a passenger in A-3s, had rechecked the enlisted man's equipment and had seen to it that his baro-release was hooked up. Investigators say the tech rep may very well have saved the enlisted man's life.

"Before I followed the tech rep out, I tapped the pilot on the shoulder and motioned for him to be sure to follow as he was very occupied with flying the aircraft," the P/N continues.

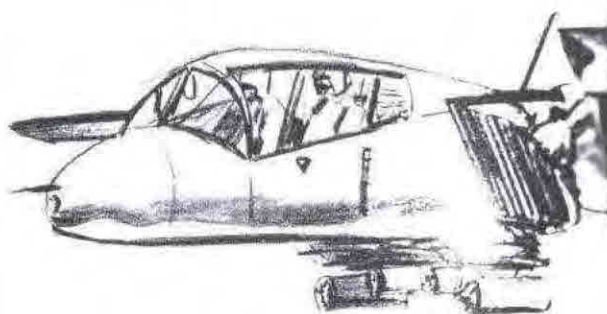
"Once out of the escape chute, I experienced extensive tumbling and disorientation. My hand was positioned to pull the D-ring once I stopped tumbling; but that was not necessary since the parachute blossomed almost immediately with a violent jolt. Although I had cinched up my chin strap tightly before I jumped, my

helmet was almost ripped off by the sudden jarring. Oddly enough my glasses remained on and intact during bailout. My oxygen mask was still connected on one side but was flapping in my face so I disconnected it and let it dangle from my seat pan. I experienced no discomfort or pain from the new torso harness which had been issued to me two days earlier and, fortunately, was much tighter than my old 'comfortable' one. Although I had difficulty seeing anywhere except straight ahead because parachute risers restricted movement of my head. I managed to see two chutes behind me and also the descending aircraft. I never did see the pilot's chute.

"The weather was about 2,000 feet overcast so I had little time to orient myself during descent. Actually, the ride down was quite enjoyable; in fact, it was the most pleasant aspect of the whole thing except for seeing the *Jolly Greens* overhead later. Once out of the clag I noticed that the immediate area was quite hilly and densely forested with a river to the north. I prepared for a tree landing but had no idea how tall the trees were. I made sure my visor was down and secure, folded my arms across my face and put my heels and legs together, slightly relaxed.

"I penetrated the trees with no problem or serious injury and made it all the way to the ground, my chute cushioned my fall by hanging up in the tree tops. Once on deck I unhooked my chute and seat pan and checked myself over for any injury. Finding myself intact, I took a drink of water from one of the bottles in my survival vest and turned on my PRC-90. Nothing happened so I took out the battery, checked it for damage and cleaned the corrosion from inside the battery compartment with my shroud cutter knife. When I put it back together it seemed to work fine so I alternated between using the beeper briefly and listening for a couple of minutes. I received no response on the radio so I decided to turn it off, sit down and survey the situation.

"My first reaction to the area was complete disorientation. I broke out the compass from my survival gear and was able to determine north, south, east and west but the dense forest precluded any attempt to join up with the rest of the crew. I was discouraged to see that lack of thick underbrush ruled out any good area for concealment. Although the forest was tall, dense and fairly difficult to traverse, you could see through it for about 50 to 100 yards. Consequently my biggest concern was being quiet. I became extremely alert for any noises, so I used the earphone to listen to the PRC-90. Within 15 minutes of my landing, an aircraft passed directly overhead at a very low altitude. I was elated at hearing an aircraft so soon but was unable to raise him on my radio and he left the area as fast as he had arrived. Also I was so slow in preparing a pencil flare





but he had disappeared by the time I was ready to use

I was having no luck with the radio so I decided to move further up the side of the hill I had landed on to improve radio reception. I remembered that most rescues were effected within the first few hours after bailout so I specifically kept all my flight and survival gear on. I figured that the hoist ring on my torso harness might be of value for a helo pickup and I found it easier to wear the survival vest than to carry it. Also the gear provided good protection when moving through the forest and afforded an encouraging sense of security. I wore my gloves, carried my helmet and moved about 75 to 100 yards up the hill south from my chute. Then I settled down to listen, watch and use my radio. Since no one was calling us on guard, I figured that the SAR teams were not in the area yet so I used the radio only intermittently. I looked at my watch and remarked to myself how fast the time was passing—we had bailed about noon and it was already 1400.

After sitting there awhile, I heard a call for us on the radio but apparently wasn't heard so I had to wait with listening to the SAR efforts. Soon after I had a search aircraft in the area which seemed to be working within about a 2-3 mile radius of position. I could hear his engine once in a while.

From the radio conversation he apparently had intermittent contact with the pilot. Once I felt the search aircraft near enough to see a signal, I fired my pencil flare, which I had kept in readiness. I almost jumped out of my skin—I had not expected it to sound like a small cannon so I not only nearly scared myself to death but I figured I might have attracted the wrong people's attention. I was still having no success with the radio so I continued to move higher up the side of the hill. As I was moving up the hill, a green H-34 went overhead and provided some encouragement to my jittery nerves.

"I finally found a small clearing, actually just a good-sized hole in the tree tops, and decided to settle down again. By this time there were two OV-10s and two A-1s orbiting low and two A-4s on top with the coordinator for the entire SAR effort. I heard from the various conversations on the radio that the *Jolly Greens* were on their way and would be here soon. But I also heard that the pilot had broken his leg. I tried to contact the search aircraft to find out the pilot's position and condition so I might be able to help but could get no one to answer.

"The OV-10s and A-1s kept making low passes over the area and the first search aircraft to arrive finally established an orbit directly over my position. It was



only when he had arrived overhead that I was able to establish radio contact. He was actually orbiting my chute as a reference but through radio communication I positioned him so he spotted me visually. I had used more pencil flares to get his attention but apparently he did not see them. Once he had me in sight he confirmed that the *Jolly Greens* would be there in about 10 to 15 minutes and told me to sit tight. I told him I was not injured so he said they would be taking the pilot out first.

"About 1530 I heard on the radio that the helos had arrived and were extracting the pilot. The search aircraft told me to get a smoke flare ready because the helo was on its way to get me. I never heard the helo until he was practically on top of me. I could see the debris flying about from his rotor wash but he was still hidden from my sight. On his first pass he went right by me so I popped my smoke flare and tried to position him by radio. There was too much noise to communicate via radio so I secured it and popped my second flare. It was a dud but he had spotted me anyway so I donned my

helmet, put down the visor and waited for the penetrator. When it was lowered to me, I quickly gave the directions, got on, strapped in, gave a thumbs up. I did not let go until I was completely and safely inside the helo. Once inside, I checked on the pilot. He was quite a bit of pain but otherwise in good luck.

"I cannot praise enough the pilot's actions throughout the entire incident. His sound head action and thorough attempt to recover from the flameout instilled in the crew the confidence and determination necessary to cope with the emergency in a level-headed manner. The civilian technician also deserves laudatory recognition for his thorough flight brief of the enlisted passenger who, as far as I am concerned, saved his life."

Many things came out of this accident investigation. The board stated that the pilot's experience points to the need for a lowering device for descending to the ground from trees and that all flight crews in SEAm should attend JEST (Jungle Environmental Survival Training) School at Cubi Point. The board suggested that while a shortage of PRC-90 radios exists, the older but still effective PRC-63's should be used to augment stocks on hand.

Uncovered in the investigation was the practice of regularly flying fourth seat passengers without seat pans during overland flights. With no seat pan the passenger is deprived of his liferaft and URT-33 emergency locator beacon. The reason given for this practice is that the seat pan is awkward and uncomfortable. "This is not considered sufficient justification," the board states, "and it is strongly suggested that the fourth seat pan be installed whenever the seat is to be occupied."

Both board and SAR personnel praised the RA-3B crew.

"The survivors remained calm under extreme pressure and, in the case of the pilot, painful injuries," the SAR report states. "They materially aided their own rescue by maintaining crew discipline and following SAR instructions promptly and accurately."

"The entire crew performed in a most professional manner," the Board stated, "and their actions were largely responsible for the successful controlled bailout and subsequent rescue."

Safety Center Comments

At the present time, NADC (Naval Air Development Center) is evaluating a lowering device for just such situations as the pilot found himself faced with. The device consists of 200 feet of small wire cable and measures 2-1/2 inches x 2-1/2 inches x 4 inches and weighs 2 pounds. It operates with a disc type braking assembly controlled by a thumb screw and will be carried in the SV-2A survival vest.