

Case Report

SAR in aircraft accident - A case report

Sqn Ldr I Chakraborty* Wg Cdr MG Ajmani[†]
Wg Cdr RS Bhakey[‡] Gp Capt RR Kapur[§]

A MIG-21 aircraft crashed in the North East sector while on a training sortie. Crash site was located from air on the day of the accident. The site was unapproachable by road due to thick jungles. Advance camp was made about 3 kms from crash site. Rescue personnel were initially winched down to the camp. Pilot's body was located 12 days after accident. It was finally brought to hospital for post mortem 15 days after the accident. Aeromedical aspects of SAR, and difficulties faced in this unique operation, are discussed in this case report.

Keywords: Ejection, search and rescue.

In the month of June 99, a MIG 21 Type 77 aircraft, during a 1 vs 1 combat training sortie, crashed in the North East sector. The leader of the formation did not see the pilot eject from the aircraft. With the help of the leader of the formation and the local radar unit, the approximate crash site was identified. It was in the midst of thick jungles of Karbi Anglang, south of Kaziranga. The crash site was not approachable by road. No human habitation was present. There was no clearing near the site where helicopter could land.

The Mission

On receiving the news of the crash, search and rescue operation (SAR), as per existing policy, was activated. Crash site was located from the air on the day of the accident. There was no sign

of parachute or the pilot. Ground rescue party was launched the same evening. They returned the next day, as it was impossible to penetrate the thick jungle with the material support that was provided. A clearing was identified approximately 2 km north of the crash site, where it was possible to winch down man and material for the rescue operation. As ejection was not noticed by the leader of the formation, the worst was feared for the pilot. Still, the mission was to find the pilot at the earliest.

Day 2: Aircraft from the local helicopter unit

- * Graded Specialist (Av Med), 43 Sqn AF, C/o 99 APO
- † Medical Officer, 11 Wing AF, C/o 99 APO
- ‡ Cl Spl. PSM, 11 Wing AF, C/o 99 APO
- § SMO & Sr Adv, Av Med, 11 Wing AF, C/o 99 APO

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was used to winch down Air Force and Army personnel at the clearing near the crash site. The area was named Advance Camp. It was located near the bank of a stream. Two tents were erected at the Camp. Basic cooking facilities were made available. Water from the stream was used for drinking, cooking and cleaning. Water sterilizing tablets were used to make the water fit for human consumption. All personnel were advised to use DMP oil and odomos liberally, as mosquitoes were plenty in the region. Salt was distributed to all personnel, so that they can get rid of leeches. A communication set was provided, through which the rescue team could communicate with any aircraft flying overhead. A Base Camp was set up with the help of Army personnel near the National Highway, where it was accessible by road. Aerial search continued to locate the pilot.

Day 3: The crash site was located by the team from Advance Camp. It was approximately 2.5 km away from the camp. Helicopters guided the team towards the crash site. The team was helped by Army personnel from the Infantry Battalion. The Army personnel provided protection from wild animals. They also acted as guides inside the jungle, and helped in making passages through the dense foliage.

There were hardly any clearing in the jungle. Most of the trees were more than 15 m high. There was thick foliage on the ground. A number of old and decayed bamboo trees used to fall down on the ground at regular intervals. Paths were made by cutting the bamboo trees and bushes. The terrain was hilly. It was raining most of the time. Due to the slushy terrain, it was difficult to negotiate the slopes. A number of rivulets were crossed to reach the site. At times, the rivulets were used for forging ahead, as the jungle was too thick for walking. While crossing the rivulets, the rescue team encountered leeches, which used

to get inside the shoes. At times, snakes were also encountered. Though no big animals were encountered during the search operations, elephant droppings were found in plenty.

Because of the thick jungle, many a times the scattered rescue team groups got lost. The land held GPS set provided by Army helped in finding the right direction. The guns were sometimes fired to provide signals to different groups. The Army personnel also taught the rescue team members how to make notch marks on the tree trunks, so that the path can be easily identified. Later, the food wrappers and other items thrown on the ground by the personnel, also acted as markers for the other team members to follow the route taken.

The site was reached after about 2 hours of trekking through the jungles. The aircraft wreckage was found near a rivulet. Most of the fuselage had been destroyed by the impact, and the subsequent fire. The ejection seat could not be located in the wreckage.

Day 4-6: Ground search continued from the Advance Camp. Definite proof had been found from the wreckage that ejection had taken place. There was a sense of urgency to find the pilot by all means.

Day 7-9: A special force of 100 defence personnel started from the Base Camp. Their aim was to perform a combing operation around the crash site.

Day 10: More personnel were winched down at the Advance Camp. They started combing operations around the camp site. Heavy rains continued in the region. Ground party from Base Camp failed to reach Advance Camp due to thick

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Role of Helicopter Unit

The local HU was involved in the rescue operations since Day 1. They had flown a total of 257 sorties for the SAR mission. A total of 104:20 hours were logged towards the effort. Load carried by the helicopters was 3100 kgs. Number of personnel inducted/deinducted was 110. From this data, it was apparent that it was a commendable achievement by the Helicopter Unit. The quantum of load carried by the unit was not the criteria, it was the terrain they operated which merits consideration.

Lessons Learnt

It was not the first time that an accident had occurred in inhospitable terrain in the NE sector. In this particular case, the airspace used for flying training sorties lies above hills and thick jungles. In case of a crash over such a terrain, special effort is required to retrieve the pilot. This particular case proves that SAR operations in the North East region requires a thorough rethinking, as the facilities available with Indian Air Force are not enough to rescue a pilot from such terrain. The pilot's body was located only on the 13th day after the accident. Bringing the body itself proved to be a daunting task. In case the pilot was alive and in an injured condition, it would have been a miracle if he could be brought out alive from such inhospitable terrain after such a long period.

For locating the aircrew after escape from aircraft, Personal Rescue Beacon (PRB) has been issued to flying units. It has been manufactured by ECIL, Hyderabad. It can transmit speech on 243 MHz, as well act as a beacon at the same frequency. However, it has to be activated for operation by the pilot. The PRB is not an aircraft

part, but carried by the pilot in his personal clothing. In this case, the pilot was not carrying PRB. Even if he had carried it, it was of no use, as neither the Station nor the HU were equipped with the homing device.

Recommendations for SAR

Once routine SAR fails to locate the survivors of an aircraft accident, prompt decision should be taken to use specialized agencies for conducting SAR operations. For example, in this particular case, personnel who had undergone Jungle Survival Course could have been utilized for SAR. Special tools like electric saws could have been used to clear the ejection seat wreckage site, so that the body could be winched up, thereby avoiding the time lost in bringing the body to Advance Camp for airlift.

Automatically activating PRBs should be introduced in IAF, so that survivors can be located without any delay. Suitable homing devices should be provided to SAR aircraft. At present, though policies on PRB exist on paper, but the practical utility of such policies requires scrutinization.

Conclusion

The SAR operation narrated in this Case Report was one of the biggest of its kind. It involved the Army and Air Force, and other local authorities. The efforts taken were enormous. However, keeping in view that flying has been continuing in this terrain since the inception of IAF, more concrete plans should be formulated, so that survivors of an aircraft accident can be rescued well within the time frame of survival of human beings.