

Log 1659

NATIONAL TRANSPORTATION SAFETY BOARD WASHINGTON, D.C.

ISSUED: March 9, 1984

Forwarded to:

Honorable Michael J. Fenello
Acting Administrator
Federal Aviation Administration
Washington, D.C. 20591

SAFETY RECOMMENDATION(S)

A-84-16

On July 23, 1982, at 0220 Pacific daylight time, a Bell UH-1B helicopter, N87701, registered to Rocky Mountain Helicopter, Provo, Utah, and operated by Western Helicopters, Inc., Rialto, California, crashed during the filming of a movie at Indian Dunes, Valencia, California.

The helicopter was being used in the filming of a motion picture scene depicting a village typical of villages in Viet Nam which was under attack from heavy ordnance. The helicopter was used as a camera platform as well as in an active role in the movie sequence. The helicopter was hovered about 25 feet above the village and nearly directly above the location where special effects explosives were detonated to simulate the heavy ordnance. As the pilot turned his helicopter to the left to facilitate camera coverage, the helicopter's tail section was engulfed in a fireball created by the detonation of a special effects explosion. The tail rotor assembly separated, and the helicopter descended out of control. The helicopter's main rotor blade struck and fatally injured three actors on the ground who were wading across a manmade river. The six occupants on the helicopter sustained minor injuries, and the aircraft was damaged substantially. 1/

The National Transportation Safety Board determined that the probable cause of the accident was the detonation of a debris-laden special effects explosion too near to a low flying helicopter leading to damage to a rotor blade, the separation of the helicopter's tail rotor assembly, and the uncontrolled descent of the helicopter. The proximity of the helicopter to the special effects explosions was due to the failure to establish direct communications and coordination between the pilot, who was in command of the helicopter operation, and the film director, who was in charge of the filming operation.

Although the Safety Board considers the safety precautions taken by the motion picture industry during the filming of stunts, combat scenes, or other dangerous activities to be beyond its investigative purview, it is concerned by the events which led to the exposure of the helicopter to the hazards of the special effects explosions because of the frequent use of aircraft in film production. The concerns expressed by the pilot and other personnel following the filming of a sequence in which special effects were detonated and following a rehearsal verified that the hazards of the operation were recognized by the

1/ For more information read, "Aircraft Accident Report: Western Helicopters, Inc., Bell UH-1B Helicopter, N87701, Valencia, California, July 23, 1982" (NTSB/AAR-84/02).

pilot as well as by some of the film production personnel. It must be recognized that the pilot in command is ultimately responsible for the safety of flight of his aircraft. Since none of the personnel involved except the pilot had knowledge of helicopters and their vulnerability to damage from debris and heat from special effects explosions, this recognition should have prompted the pilot, who was responsible for the operation of the helicopter in a manner that would not pose a hazard to persons or property on the surface, to initiate the measures necessary to insure that the helicopter would be separated safely from the prepositioned special effects mortars when the mortars were detonated. These measures should have included, at a minimum, an insistence on a joint briefing among the director, the pilot, and the special effects technicians as to the exact maneuver the helicopter was to perform, the timing of the maneuver, and a keying of the detonation of the huts to the helicopter's completing the left turn and moving across the river. Further, as an added precaution, the pilot should have insisted on direct radio communication with the technicians to keep them apprised of his progress in the maneuver and to warn them in the event that alterations of the intended maneuver became necessary. In this case, however, no specific measures were agreed upon. Instead, the pilot relied on assurances from the unit production manager (UPM) and special effects coordinator that nothing would be exploded beneath the helicopter. Additionally, apparently in response to commands from the director, the pilot modified the maneuver and flew lower over the surface of the river and closer to the huts than had been intended originally, as established by the observations of the cameraman on the left skid and the cameramen on the north shore of the river. Consequently, it is evident that the operation lacked the precise planning and coordination needed to conduct it safely, particularly if changes in the scenario were made.

On the other hand, the Safety Board also recognizes that in the motion picture and television film industry, the director has full responsibility for safety on the set of a filming operation. Consequently, it is incumbent upon the director to take cognizance of visible and reported hazards and to take the measures needed either to eliminate the hazards or to cope with the hazards in a manner that will insure the safety of the personnel involved. In this accident, the director did not conduct preproduction meetings with the principals concerned—pilot, UPM, assistant director, and special effects coordinator—regarding the hazards related to operation of the helicopter in proximity to the special effects explosions. Further, when apprised of the hazards by the UPM and the pilot, the director took no positive measures to insure the precise coordination needed among all concerned to eliminate the hazards. Consequently, the Safety Board concludes that the director failed to fulfill his responsibility of insuring safety on the film set.

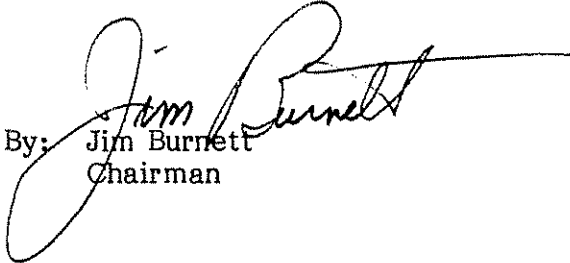
The Safety Board appreciates the FAA's recognition that significant precautions must be taken to assure safety of persons and property when civil airplanes are used in the production of movie and television films. Since March 1982, operators of airplanes (but not helicopters) used in film productions have been required to prepare a Flight Operations Manual detailing the safety precautions that must be taken before the operators are permitted to fly the aircraft at altitudes below minimum safe altitudes established by regulations. The Safety Board recognizes that the flight rules for helicopters allow pilot-initiated deviations from the minimum safe altitudes prescribed by regulation and that, practically speaking, requiring an express waiver for each operator would degrade the helicopter's utility and value, which lie in its ability to hover and fly slowly at very low altitudes. Film production helicopter operators have not been required to obtain a specific waiver of the flight rules to operate at very low altitudes and have not been required to prepare a Motion Picture and Television Flight Operations Manual. However, the Safety Board believes that the facts, conditions, and

circumstances of this accident amply demonstrate the need for a requirement that helicopter operators prepare such a manual and carry out its provisions as a prerequisite to the use of a helicopter in movie and television film production. At a minimum, the manuals should contain provisions for pilot qualifications, including any special qualifications needed, mandatory briefings of film production personnel on the risks involved, the safeguards needed during operations, emergency procedures, a plan for communications among all participating personnel, and a provision confirming the pilot-in-command's ultimate authority to control all flight regimes relative to this type of operation.

Therefore, the National Transportation Safety Board recommends that the Federal Aviation Administration:

Extend the terms of FAA Order 8440.5A Section 5, Waiver of Section 91.79(a) and (c), Motion Picture and Television Flight Operations Manual, to require an FAA-approved flight operations manual for all types of aircraft. (Class III, Longer Term Action) (A-84-16)

BURNETT, Chairman, GOLDMAN, Vice Chairman, BURSLEY, and ENGEN, Members, concurred in this recommendation. GROSE, Member, did not participate.

By: 
Jim Burnett
Chairman