

Petition Denied

In April 1991, the Federal Aviation Administration denied the Balloon Federation of America's petition to revise FAR §91.119, minimum safe altitudes. The following was the FAA's reasoning in turning down the petition:

"Section of the FAR affected:

"Section 91.119(b) prescribes that no person may operate an aircraft over any congested area of a city, town, or settlement at an altitude of less than 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft.

"Section 91.119(c) prescribes that no person may operate an aircraft over other than congested areas at an altitude of less than 500 feet above the surface, except over open water or sparsely populated areas. In that case the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.

"The petitioner's supportive information is as follows:

"BFA stated that the minimum safe altitudes required by §91.119 were based on the flight characteristics of aircraft and not on lighter-than-air craft, such as hot air balloons. In certain instances, operating balloons at the minimum safe altitudes specified in §91.119(b) and (c) can result in causing a higher risk to persons and property on the surface. Free balloons normally have a horizontal velocity of 10 to 20 miles per hour. During a burner or fuel system failure, a free balloon could reach a terminal velocity of 800 to 1,200 feet per minute vertical descent. Thus, the higher the altitude at which an emergency occurs, the higher the impact velocity. BFA stated that reducing the required minimum safe operating altitudes for balloons will contribute to safety in the event of a malfunction by reducing the resultant impact velocity.

"Furthermore, BFA stated that the minimum safe altitude requirements of §91.119(b) and (c) are counterproductive to safety interests for balloons transitioning from cruising flight to landing, because the winds can vary as much as 180 degrees from 1,000 feet AGL to the surface. BFA stated that it is quite normal for a balloon, during the approach phase of flight, to require sustained flight of over a mile at 500 feet AGL or less to reach the desired landing site.

"In addition, BFA stated that requiring balloons to operate at the same altitude with airplanes and rotorcraft is unsafe, because balloons have much slower operating airspeeds and are less maneuverable than airplanes and rotorcraft.

"A summary of the original petition was published in the Federal Register on September 18, 1986 (51 FR 33061). There were 336 one-page identical form letters received from balloon pilots, who supported the BFA's petition. There was one letter from a balloon pilot who opposed BFA's petition.

"The comments in the letters which supported the petition were brief extractions lifted directly from the information submitted in BFA's petition.

"The commenter who opposed BFA's petition stated that during his 20 years of ballooning experience he has found the rule quite adequate and made the following three points: (1) The current rule allows a pilot to fly low for approach and landing but not for the sake of flying low. (2) Most balloon accidents occur close to the ground, either from impact with power lines, other obstructions, or hard landings. (3) A fleet of low flying balloons "buzzing" the surface is not in the interest of ballooning or its future, especially if it's at 6:00 o'clock in the morning.

"The Federal Aviation Administration's (FAA) analysis/summary is as follows:

"The FAA has determined that a grant of BFA's petition would not be in the interest of flight safety. Lowering the minimum safe operating altitude requirements for free balloons will not enhance safety for persons and property on the surface. Although the petitioner cites certain instances in his supportive information that appear to be valid arguments for lowering altitudes, opposing arguments arise from an examination of accident records for free balloons. The following summary was prepared from National Transportation Safety Board (NTSB), files on free balloon accidents from 1983 through 1990.

"There were 180 free balloon accidents investigated by the NTSB during the period January 1, 1983, through August 26, 1990. These included 12 fatal accident accounting for a total of 17 fatalities, and 96 non-fatal accidents accounting for a total of 166 serious injuries.

"Fatal Accidents - Eight were approach and landing accidents, in which the balloons struck powerlines which caused electrocution or burn fatalities to 11 occupants. Three were take-off or initial climb accidents, where one balloon struck an object, another experienced a systems failure, and the third experienced an in-flight fire. All three entered uncontrolled descents which resulted in a total of five fatalities. There was one in-flight cruise accident in which the pilot suffered a fatal heart attack resulting in the balloon's gradual descent into a house. The two passengers on board were not injured.

"Non-Fatal Accidents - Forty-eight approach or landing accidents occurred as the balloons struck powerlines, structures, trees, fences, poles or the ground at higher than normal sink rates or ground speeds. These accidents were attributed to pilot performance, unfavorable winds, unsuitable terrain, equipment failure, or combinations thereof. Twenty-two takeoffs or initial climb accidents occurred as the balloons encountered the same hazards, for the same reasons, as they did in the landing accidents cited above. The remaining 26 nonfatal in-flight cruise accidents are broken down into the following categories.

"Mid-Air Collisions - Ten accidents resulted from balloons colliding with one another on five separate occasions. In-flight damage in all cases necessitated emergency landing, which in turn caused further damage to some of the balloons. These accidents occurred during rallies and competition meets, and were attributed to piloting techniques and failure to maintain visual separation.

"Encounters With Adverse Weather Conditions - Eight accidents occurred primarily from damage during emergency landings following in-flight encounters with severe weather conditions such as fog, rain, icing, turbulence, down draft, or high wind conditions. These accidents were attributed to poor planning, incomplete weather briefings, improper in-flight decision making, and in some cases pilot inexperience, or equipment limitations.

"Collision With Powerlines - Six accidents occurred during inadvertent encounters with powerlines while cruising at low levels. These accidents were attributed to pilots failing to maintain proper obstacle or terrain clearance altitudes.

"Fuel System Failures In-Flight - Two accidents occurred following malfunctions of the propane burner systems which resulted in uncontrolled descents to the surface. In one instance, the pilot stated he inadvertently shut off the pilot light valve. In the other, a bogus part was discovered in the blast valve mechanism which prevented it from functioning properly.

"This review of the accident data revealed that 75 percent of the mishaps occurred during the approach and landing, or the liftoff and climb out phase of the flight. These accidents also accounted for all the fatal injuries sustained by the pilots and passengers. Since the altitude restrictions of §91.119(b) and (c) do not apply to these phases of flight, the petitioner's recommended rulemaking change if approved, would have little if any effect, on these types of accidents. Therefore, the following discussion concerns the 26 nonfatal accidents that occurred during the cruise phase of flight.

"The ten mid-air collision accidents all involved balloons colliding with balloons. Although BFA states that requiring balloons to operate at the same altitude with airplanes and rotorcraft is unsafe, there were no fixed wing or rotary wing aircraft collisions with balloons during the period covered by the 1983 through 1990 NTSB records.

"The eight accidents following encounters with adverse weather conditions while cruising resulted in forced or precautionary landings resulting in the injuries or property damage. Since the pilots encountered these weather conditions inadvertently after launching with less than optimum weather or incomplete weather briefings, it is difficult to equate the cause of the accidents to flying at too high of an altitude above the terrain as the petitioner believes is mandated by §91.119.

"The six accidents involving collisions with powerlines resulted from balloon pilots deliberately cruising at less than the minimum safe altitudes prescribed in §91.119.

"The two fuel system failure accidents during cruise flight resulted in one uncontrolled, and one partially

controlled descent from altitude. The more serious of the two uncontrolled accidents was the one in which five of the seven occupants fell out of the basket as the balloon struck a metal fence, bounced, and hit a tractor. The remaining passenger and pilot remained in the basket and were carried 200 yards further into a swamp. Three passengers were seriously injured, and the three others, plus the pilot received minor injuries. The petitioner states that during a burner or fuel system failure, a free balloon could reach a terminal velocity of 800 to 1,200 feet per minute vertical descent. Thus, the higher the altitude at which an emergency occurs, the higher the impact velocity. Although the validity of these two statements is not questioned, two nonfatal accidents out of 108, over a period of nearly 7 years which resulted from fuel system problems, does not support the lowering of minimum safe altitudes for flight. The 336 form letters that were received following publication of the petition in the Federal Register did not introduce any new reasoning beyond that of the petitioner for changing §91.119. The one additional letter that was received in which the commenter took exception with the petitioner's submission made three specific points that the FAA believes are quite accurate.

"Although the FAA is aware that balloons have special flight characteristics that allow them the capability of conducting flights at lower altitudes, the FAA is not convinced that such operations would not have an adverse effect on safety. For instance, balloon pilots cruising at lower altitudes would have less reaction time available for responding to emergencies or to avoid tall obstructions, such as high voltage powerlines, that pose one of the greatest dangers to balloon pilots and their passengers. In addition, the FAA has received repeated complaints from citizens concerning the environmental noise impact that low flying balloons create. It can be argued that the sight and burner blast sounds of a single balloon or a fleet of them at an altitude of 200 feet or lower above a highway may result in persons being sufficiently distracted to cause highway traffic accidents. Therefore, the FAA has determined that the lowering of the minimum safe operating altitudes of §91.119, as requested by BFA in its petition, would have an adverse effect on transportation safety. Furthermore the FAA believes that these minimum safety standards have proven to be adequate and reasonable in protecting the public. The FAA has determined that BFA's supportive information in its petition has not provided a level of safety for persons and property on the surface equivalent to that provided by §91.119.

"In consideration of the foregoing, I find that a grant of rulemaking would not be in the public interest. Therefore, pursuant to the authority contained in Sections 313(a) and 601(c) of the Federal Aviation Act of 1958, delegated to me by the Administrator (14 CFR 11.53), the petition of the Balloon Federation of America for a rulemaking to amend §91.119 (b) and (c) of the Federal Aviation Regulations is hereby denied.

"Signed - Thomas C. Accardi, Acting Director, Flight Standards Service, Issued in Washington, D.C., on April 18, 1991."

