



NTSB National Transportation Safety Board

Office of Aviation Safety

ENG Safety Equipment and Visual Markings

Airworthiness
Presentation

Anticollision Lights

- 14 CFR 27.1401
- Accident helicopters equipped with anticollision lights
- Lights likely on during flights and likely visible

Anticollision Lights

- High-intensity anticollision lights
- More visible than standard anticollision lights

Anticollision Lights



Blade Paint Schemes

- FARs do not address conspicuity of main rotor and tail rotor blades
- CAMI study: most conspicuous blade paint scheme provided flickering sensation

Blade Paint Schemes

- USFS: high-visibility paint scheme requirements for helicopter contractors
- Helicopter air tour operators: high-visibility rotor blades help avoid collisions
- TSB report: air tour flights in Niagara Falls area must have approved conspicuous paint schemes on upper blade surfaces

Blade Paint Schemes



Blade Paint Schemes

- Main rotor blades were blue-gray on top and black on bottom
- Enhanced coloration could have increased conspicuity of helicopters
- High-intensity anticollision lights would help when blade paint might not be visible

Traffic Advisory System

- Channel 3 helicopter had optional traffic advisory system
 - Tracked up to 30 aircraft
 - Predicted collision threats
 - Provided aural warning of aircraft on collision path
 - Plotted eight most threatening aircraft locations on display
- Channel 15 helicopter did not have optional traffic advisory system

Traffic Advisory Systems

- System would have aided pilot as helicopter entered the scene
- “Traffic, traffic” should have frequently sounded once channel 15 helicopter was inside channel 3 system’s alerting envelope
- System would have been less useful as position locator because of nuisance alerts

Traffic Advisory Systems

- Visual displays of nearby traffic can show aircraft's relative altitude and direction of travel
- Help pilots maintain awareness of, and visual contact with, nearby aircraft
- Traffic advisory systems are not substitute for see-and-avoid concept

Traffic Advisory Systems

- Traffic advisory systems not specifically designed for helicopter flight characteristics
- System designed specifically for helicopters could help eliminate nuisance warnings that ENG pilots can receive



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