



# IHST

International Helicopter Safety Team  
Our Vision: An International Civil Helicopter Community With Zero Accidents

## Training Fact Sheet – Rotor Rooter: Rooting for Autorotational Success

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### *Autorotation Acronyms*

The Rotor Rooter Program is an FAA Safety Team (FAASTeam) sponsored initiative aimed at reducing light helicopter training accidents in support of IHST's accident reduction goals. Analysis reveals that approximately 17% of all helicopter accidents occur during training, while a large portion of these training accidents occur during autorotation training.

The Rotor Rooter-Acronym Series provides pilots with user friendly acronyms to help them systematically identify, quantify, and mitigate certain risk factors associated with autorotation training. These memory aids can help pilots remember critical factors to consider, while also emphasizing the importance of developing systematic procedures for defending against risk factors inherent with autorotations.

exercises. Unfortunately, this results in lost time, money, confidence and safety.

Helicopter pilots along with their instructors can use the following pre-flight briefing acronym to facilitate discussion, while also formulating strategies for mitigating risk prior to autorotation training:

- P**=Progressive Approach (see FAA AC-000)
- R**=Recovery Gates
- E**=Environment
- A**=Airspeeds
- U**=Understanding
- T**=Techniques to be used
- O**=rotor limitations
- S=SAFE= S**: Spot/Setup/Standards; **A**: ATC/Communications; **F**: Flight Instructor intervention; **E**: Engine/systems

### Auto Configuration/Setup Briefing

Pilots often rush into autorotation events without properly configuring their aircraft, or being mentally prepared for what's about to take place. This false sense of urgency often results in unsatisfactory performance. Instructors need to encourage pilots to take their time, while also using safety minded techniques for maintaining positive control throughout the maneuver. Investing extra time configuring and properly setting up for an autorotation often yields positive results.

The HASEL briefing acronym should be used to aid pilot memory of critical factors needing consideration prior to entering an autorotation.

- H**=Height (AGL)- appropriate initiation altitude
- A**=Area (LZ)- clear of hazards
- S**=Setup/Security- confirmed/established
- E**=Engine/systems- checked/confirmed
- L**=Look for traffic/obstacles

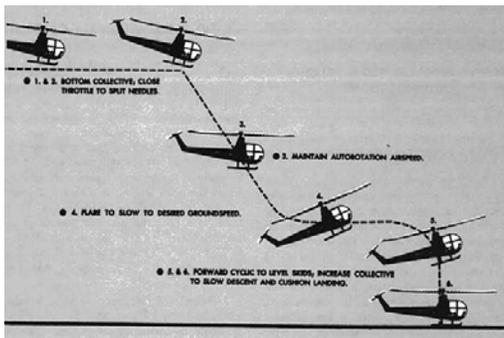


FIGURE 77—Flare autorotation and touchdown.

### Pre-Flight Auto Briefing

A thorough pre-flight briefing and understanding between pilots and instructors can never be overstressed. Too often, pilots and their instructors launch into training sessions without being mentally and physically prepared for autorotation training

Pilots are wise to take their time and methodically ensure all internal and external risk factors are contained within their operational envelope, before entering the autorotation (Reference IHST's Maneuver Initiation Envelope (MIE)-Training Fact Sheet). A heightened sense of situational awareness is always beneficial, while remaining on high alert for distractive events and/or situations that can quickly effect safety.

## Awww "RATS"...Staying Ahead of the Curve

Prioritization is often a big challenge during autorotation training, regardless of experience. From beginning to end, autorotations are finished in a matter of seconds. During such training, many factors call for attention-sometimes all at once. Pilots conducting autorotation training are often left wondering what they should be looking at, in what priority and for how long. Confused?

RATS can help pilots prioritize their scan during autorotation training and reduce the effects caused by fixation on one particular instrument or element for too long:

**R**= Rotor  
**A**= Airspeed  
**T**= Trim  
**S**= Spot

Called out and repeated as many times as necessary, RATS can help pilots maintain a progressive scan. With proficiency and experience, pilots begin developing their own personalized scanning technique for giving adequate priority to the elements influencing the successful demonstration of autorotations.

## Using Acronyms in Helicopter Flight Education and Training

Aviation acronyms have been alive and well for a long time. Research reveals that proper use of acronyms during the flight education process can increase pilot motivation, retention, enjoyment and performance. Flight instructors should strive to develop fun and innovative methods for helping their pilots retain knowledge, implement safe practices and improve performance throughout the education process. Acronyms can help this effort.



## Summary

Several autorotation training accidents have been the direct result of pilots and their instructors not following checklists and procedures for ensuring the helicopter is properly configured within its environment. A false sense of urgency often results in sloppy and unsatisfactory performance.

Using the PREAUTO, HASEL and RATS briefing aids, coupled with OEM approved checklists and procedures, will greatly enhance safety and communications between pilots and their instructors prior to autorotation training.

## Acknowledgement

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**More information about the IHST, its reports, its safety tools, and presentations can be obtained at its web site: ([www.IHST.org](http://www.IHST.org)).**

