



August 2010, Vol 1. No. 3

Safety at the Summer Conference

The national safety officer will be at CAP's summer national conference and available to meet the members of CAP. Safety will have two classes that are fun, encouraging, and ideal for all members of CAP and enhance knowledge and awareness. Here are the courses that will be offered with no enrollment fee:

SE01 Executive Safety Course

Presenters: CAP/SE: Col Bob Diduch, CAP-USAF: Maj Chris Hamm, CAP NHQ/SE: Mr. Frank Jirik

This course is designed for Wing, Region, and National Staff and Commanders; however, the course is open to all CAP members. A joint presentation from CAP, CAP-USAF, and CAP NHQ, this course will educate CAP members on how to review a mishap report from a command level and give insight as to what is good and not so helpful within a mishap investigation after it has been completed. It encourages leaders to take a view of a mishap from an educational stand, educating and encouraging leaders to make corrective actions that bridge the gap of learning with CAP's members, and to create action requirements that will instill fresh new habits before being released back to CAP duty functions.

SE02 Introduction to Mishap Investigations

Presenters: CAP-USAF: Maj Chris Hamm and CAP NHQ/SE: Mr. Frank Jirik

This course is designed to give CAP members in any position a fundamental idea of how to conduct a CAP mishap investigation. Focusing on who, what, when, where, how, and why, enables the investigator to ensure the factual account includes all the factual evidence. This course will explain principals of investigation from capturing statements of the participants and witnesses to preservation techniques of collecting evidence. It will cover the process of being designated as an investigator through assembling of data to preparing a final briefing. All CAP members are encouraged to take this course, particularly members that are active in a safety track, mission safety position, or currently serving as a safety officer. This is a good course for unit commanders to attend.

The Future of CAP Safety

It is very important to know that CAP's safety programs to create a positive learning environment and positive safety culture for all CAP members.

Under the leadership of the national safety officer, supported by his assistant safety officers and working with the professional input and support of the national headquarters safety department and CAP-USAF, the focus and goal of CAP's safety program is to be positive and educational. A safety program is one that predicts and mitigates risks as opposed to a reactive safety program.

With all safety activities to include mishap investigations, please remember the intention of the outcome is to create awareness and prevent future occurrence.

We are focusing on positive behaviors and coaching undesired behaviors back on track. Safety is a habit that only you can positively control.

Repeat Mishaps

Hangar rash, fainting, tailstrikes, heat injuries, and vehicle inspection are real concerns. These are the repetitive topics of conversation. The National Safety Team had given ideas for best practices, and now we are interested what you are doing to show action. This month, please focus on the mishaps of the year, primarily in these categories and brainstorm what you are going to do in your units to show action. Please submit your unit name, location, and practice. If you have had a mishap in one of these categories, please share what you did to change the process and how you chose to create positive behaviors. Please submit your information to the online safety suggestion tool. This month is about an action focus and accountability.

Mishaps

The following are based upon true stories. Resemblance of these events that may have occurred in a CAP unit near you are coincidental. You have asked for this, so here it is.

VEHICLE

- Emergency response trailer toppled by high winds. Best Practice: Consider parking light equipment near a building, if possible, to protect from high winds and debris. If parking remotely, strap equipment to the ground, if necessary.
- A CAP pick-up truck blew a tire while pulling a trailer. Damage to the vehicle fender, \$2K. Further inspection required all tires on the vehicle to be replaced.

AIRCRAFT

- Tail strike during landing.
- Aircraft impacted by a nearby private aircraft during tow operations.

BODILY INJURY

- Heat exhaustion; fainted in formation. Best Practice: Increase rest periods. If a member appears to have a physical concern, remove the person from the activity. Treat appropriately with rest. Most of the nation has been in an elevated risk category for heat injury and establishing a firm rest-to-work ratio is important. Cadets at encampment should be visually confirmed to have fluids in their canteens and actually drinking. If a member just stands there when advised to hydrate, it is a command responsibility to ensure they are capable and aware of the direction given and that fluids are available. Ensure adequate rest facilities so members can use the restroom when needed. Heat and fainting continues to be a risk item.
- Pre-existing conditions. Due to the nature of personal confidentiality, specifics cannot be disclosed, but please refer to last month's newsletter on this topic.

Remember that rehydration and rest guidelines apply to everyone – not just cadets. Often though, we neglect rest recommendations, and we fail to add that heat charts also say they refer to acclimated individuals. Most members attending national or wing activities are not acclimated, and need more shade and periods of rest.

Hear Our Thoughts, Hear Our Experiences By Members of the Civil Air Patrol Nationwide

Here are some of the words of wisdom often overlooked in our daily lives. Complacency can slide into our world in simple ways that we miss in the hustle and bustle of daily life. Thank you for your submissions. If you have a practice or safety awareness topic to share, the instructions are in the January 2010 "Sentinel" for your reference. Keep in mind these are ideas, not CAP policy.

Stephen D Ezell	OK-024	July 2010	When at home, especially if there are small children present, keep all flammable items, i.e., matches, cigarette lighters, etc., and chemical containers out of the reach and carefully secured at all times! Also, it is highly recommended that you do not under any circumstances attempt to burn brush or debris without obtaining clearance from your area's proper fire authority.
John A Schreckengost	PA-125	July 2010	When on a mission, be carefull of snakes when walking in high grass or brush. You could step on a snake and never see the snake.
Robert D Stiles	PA-125	July 2010	Well the sun is shining and the bees are back. So when your in the yard or woods watch your step! Some species will nest underground as well as in trees or high places. So take caution and don't stir them up and you won't get hurt..
Kevin James Berry	PA-190	July 2010	Carry a small bottle of hand sanitizer and use it to clean your hands prior to putting them to your face for any reason. This will help reduce the transmisson of disease, keeping you, and others whom you may infect, safer.
Irwin I Kleinman	IN-175	July 2010	When using corporate issued tie-downs check to see that any provided tie-downs are removed and properly stored.
Mark E Miller	MO-149	July 2010	Use of extension electrical cords can be a cause of many trip hazards in CAP. Always remember to run these cords in areas of no or little traffic. If this is unavoidable, place cord covers and/or markers to indicate a trip hazard area.
Stormy F Lamantia	PA-125	July 2010	Never stand close to a window while videotaping the lightning with your camera.
Steven D Mohan	CO-179	July 2010	Organize PT later in the day when it is cooler to prevent heat exhaustion
Woodrow W Shepherd	GA-043	July 2010	It is recommended glider trailers ought to have anti-sway bars mounted on trailer. It is also recommended that other CAP trailers ought to be evaluated to see if they should have anti-sway bars mounted on them, especially if they are going to be traveling any distance.

A picture is worth a 1000 words!



A little more to the left next time.

Attachments

- CAP Safety Alert – Tire Safety # 10-4 (Also available on the CAP Safety page, www.capmembers.com)
- FAA Special Air Worthiness Information Bulletin – CE-10-21

Until Next Month

Discover, report, stop, share, listen, and learn. The things we have read about in this issue already have happened, so you are not allowed to experience these for yourself. Remember to “Knock It Off” and slow down. For streaming dialogues on some subjects, remember CAP Safety is on Facebook and Twitter. Have a good month.





Alert# 10-04



VEHICLE TIRE SAFETY

AFFECTED WINGS: ALL
AFFECTED DUTY POSITIONS: ALL
PUBLISHED: June 19, 2010
EFFECTIVE: Immediately
REFERENCES: CAPR 77-1

It is imperative that we increase awareness of vehicle maintenance items and general tire condition. With higher ambient temperatures, and with increased useage for summer activities, it is important that we keep our members safe with vehicles that are only in top performing condition.

It is mandatory that all vehicle tires be inspected prior to operation (CAPF 73) of any CAP vehicle to check for wear, condition, abnormailites, and pressure. Any condition found to be out of limits shall be corrected before operation of the vehicle.

Examples of tires that should be considered for replacement are: Uneven treadwear, cracking sidewalls (as pictured), damaged air valves, damaged or missing tread, and minimal tread (high mileage).



Tire replacements for CAP ground vehicles are coordinated and reimbursed by NHQ Logistics and can be reached at 1-877-227-9142, ext. 275. For after hours and on weekends refer to the following guidance in CAPR 77-1, paragraph 9. C 2).

(See page 2)

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CAPR 77-1, para 9. C 2). (Regulation Date: 1 SEP 2003)

- 2) Emergency repair procedures
 - a) Emergency is defined as a repair needed while away from home station.
 - b) Telephone emergency to NHQ CAP/LGT for approval. Include the following:
 - Vehicle ID number
 - Problem with vehicle
 - Repair estimate
 - Caller's name
 - Method to contact caller
 - c) Fax or mail the vehicle reimbursement request and estimate or invoice for repairs to NHQ CAP/LGT within 24 hours.
 - d) After emergency repair is completed, mail paid original invoice to NHQ CAP/LGT within 10-working days.
 - e) If an emergency occurs on a weekend or after normal working hours, call NHQ CAP/LGT and leave a message on the answering machine. When leaving a message, follow the procedures listed in paragraph 9.c.2)b). If the estimated repairs exceed \$500, notify NHQ CAP/LGT the next working day for approval prior to repair. If the estimated repairs are less than \$500, proceed with repairs and comply with paragraph 9.c.2)c).

CAPR 77-1 ATTACHMENT 5 1 SEPTEMBER 2003 Attachment 5. Tire Safety-Everything Rides On It

Edited from the U.S. Department of Transportation National Highway Traffic Safety Administration (NHTSA) DOT HS 809 361

TIRE SAFETY Everything Rides On It

Studies of tire safety show that maintaining proper tire pressure, observing tire and vehicle load limits (not carrying more weight in your vehicle than your tires or vehicle can safely handle), avoiding road hazards, and inspecting tires for cuts, slashes, and other irregularities are the most important things you can do to avoid tire failure, such as tread separation or blowout and flat tires. These actions, along with other care and maintenance activities, can also:

- Improve vehicle handling
- Help protect you and others from avoidable break-downs and accidents
- Improve fuel economy
- Increase the life of your tires.

TIRE PRESSURE

Tires should be inflated in accord with the vehicle manufacturer's recommendations. These can be found in the owner's manual or on a placard, which is often located in the glove compartment or on the driver's doorjamb. Motorists should not rely on visual tire inspections to determine whether a tire is properly inflated but should use a tire pressure gauge to do so.

Finding Your Vehicle's Recommended Tire Pressure and Load Limits

Tire information placards and vehicle certification labels contain information on tires and load limits. These labels indicate the vehicle manufacturer's information including:

- Recommended tire size
- Recommended tire inflation pressure
- Vehicle capacity weight (VCW –the maximum occupant and cargo weight vehicle is designed to carry)
- Front and rear gross axle weight ratings (GAWR – the maximum weight the axle systems are designed to carry).

Both placards and certification labels are permanently attached to the vehicle door edge, doorpost, glove-box door, or inside of the trunk lid. You can also find the recommended tire pressure and load limit for your vehicle in the vehicle owner's manual. Manufacturers of passenger vehicles and light trucks determine this number based on the vehicle's design load limit, that is, the greatest amount of weight a vehicle can safely carry and the vehicle's tire size. The proper tire pressure for your vehicle is referred to as the "recommended cold inflation pressure." (As you will read below, it is difficult to obtain the recommended tire pressure if your tires are not cold.)

Because tires are designed to be used on more than one type of vehicle, tire manufacturers list the “maximum permissible inflation pressure” on the tire sidewall. This number is the greatest amount of air pressure that should *ever be put in the tire under normal driving conditions*. Remember, however, that the vehicle manufacturer, not the tire manufacturer, determines the correct tire pressure for the tires on your vehicle. The recommended tire inflation pressure that vehicle manufacturers provide reflects the proper psi when a tire is cold. The term cold does not relate to the outside temperature. Rather, a cold tire is one that has not been driven on for at least three hours. When you drive, your tires get warmer, causing the air pressure within them to increase. Therefore, to get an accurate tire pressure reading, you must measure tire pressure when the tires are cold or compensate for the extra pressure in warm tires.

Steps for Maintaining Proper Tire Pressure

Step 1: Locate the recommended tire pressure on the vehicle’s tire information placard, certification label, or in the owner’s manual.

Step 2: Record the tire pressure of all tires.

Step 3: If the tire pressure is too high in any of the tires, slowly release air by gently pressing on the tire valve stem with the edge of your tire gauge until you get to the correct pressure.

Step 4: If the tire pressure is too low, note the difference between the measured tire pressure and the correct tire pressure. These “missing” pounds of pressure are what you will need to add.

Step 5: At a service station, add the missing pounds of air pressure to each tire that is underinflated. CAPR 77-1 **Step 6:**

Check all the tires to make sure they have the same air pressure (except in cases in which the front and rear tires are supposed to have different amounts of pressure).

If you have been driving your vehicle and think that a tire is underinflated, fill it to the recommended cold inflation pressure indicated on your vehicle’s tire information placard or certification label. While your tire may still be slightly underinflated due to the extra pounds of pressure in the warm tire, it is safer to drive with air pressure that is slightly lower than the vehicle manufacturer’s recommended cold inflation pressure than to drive with a significantly underinflated tire. Since this is a temporary fix, don’t forget to recheck and adjust the tire’s pressure when you can obtain a cold reading.

Checking Tire Pressure

Only 49 percent of gas stations that are equipped with air pumps provide tire pressure gauges, which are critical to determining if the correct amount of air has been delivered to tires. However, for a nominal price, motorists can purchase a tire pressure gauge. Because tires may naturally lose air over time, it is important to check your tire pressure at least once a month. For convenience, purchase a tire pressure gauge to keep in your vehicle. Gauges can be purchased at tire dealerships, auto supply stores, and other retail outlets. Remember, the tire inflation number that vehicle manufacturers provide reflects the proper pounds per square inch (psi) when a tire is cold. To get an accurate tire pressure reading, measure tire pressure when the car has been unused for at least three hours. A radial tire can lose much of its air pressure and still appear to be fully inflated. Operating a vehicle with substantially under-inflated tires can result in a tire failure, such as instances of tire separation and blowouts, with the potential for a loss of control of the vehicle. Under-inflated tires also shorten tire life and increase fuel consumption.

Maximum Permissible Inflation Pressure

This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

Tire Size

To maintain tire safety, purchase new tires that are the same size as the vehicle’s original tires or another size recommended by the manufacturer.

Look at the tire information placard, the owner’s manual, or the sidewall of the tire you are replacing to find this information. If you have any doubt about the correct size to choose, consult with the tire dealer.

Maximum Load Rating

This number indicates the maximum load in kilograms and pounds that can be carried by the tire.

Tire Tread

"It is vitally important that motorists monitor tread depth to guard against tire failure and replace unsafe tires. Checking tires is a crucial element in regular vehicle maintenance," said Dr. Jeffrey W. Runge, NHTSA's Administrator.

Like tires that are under-inflated, bald tires also pose risks to motorists. A tire with insufficient tread can cause a driver to lose traction, especially under wet conditions. In addition, bald tires are more prone to damage caused by road debris.

The tire tread provides the gripping action and traction that prevent your vehicle from slipping or sliding, especially when the road is wet or icy. In general, tires are not safe and should be replaced when the tread is worn down to 1/16 of an inch. Tires have built-in treadwear indicators that let you know when it is time to replace your tires. These indicators are raised sections spaced intermittently in the bottom of the tread grooves. When they appear “even” with the outside of the tread, it is time to replace your tires. Another method for checking tread depth is to place a penny in the tread with Lincoln’s head upside down and facing you. If you can see the top of Lincoln’s head, you are ready for new tires.

Tire Balance and Wheel Alignment

To avoid vibration or shaking of the vehicle when a tire rotates, the tire must be properly balanced. This balance is achieved by positioning weights on the wheel to counterbalance heavy spots on the wheel-and-tire assembly. A wheel alignment adjusts the angles of the wheels so that they are positioned correctly relative to the vehicle’s frame. This adjustment maximizes the life of your tires and prevents your car from veering to the right or left when driving on a straight, level road. These adjustments require special equipment and should be performed by a qualified technician.

Tire Safety Checklist.

Check tire pressure regularly (at least once a month), including the spare.

Inspect tires for uneven wear patterns on the tread, cracks, foreign objects, or other signs of wear or trauma.

Remove bits of glass and other foreign objects wedged in the tread.

Make sure your tire valves have valve caps.

Check tire pressure before going on a long trip.

Do not overload your vehicle. Check the tire information placard or owner's manual for the maximum recommended load for the vehicle.

If you are towing a trailer, remember that some of the weight of the loaded trailer is transferred to the towing vehicle.

Protection against avoidable breakdowns and crashes.

Improved vehicle handling. Better fuel economy. Increased tire life. Just a few of the reasons to take five minutes every month to check your tires. Simply use the handy checklist below, and see the reverse side for more information on tire safety. Safety Checklist Check tire pressure regularly (at least once a month), including the spare. Inspect tires for uneven wear patterns on the tread, cracks, foreign objects, or other signs of wear or trauma. Remove bits of glass and other foreign objects wedged in the tread. Make sure your tire valves have valve caps. Check tire pressure before going on a long trip. Do not overload your vehicle. Check the tire information placard or owner's manual for the maximum recommended load for the vehicle. If you are towing a trailer, remember that some of the weight of the loaded trailer is transferred to the towing vehicle.

Safety Tips

Slow down if you have to go over a pothole or other object in the road. Do not run over curbs, and try not to strike the curb when parking. Remember to check your tires once a month! There's Safety In Numbers You can find the numbers for recommended tire pressure and vehicle load limit on the tire information placard and in the vehicle owner's manual. Tire placards are permanent labels attached to the vehicle door edge, doorpost, glove-box door, or inside of the trunk lid. Once you've located this information, use it to check your tire pressure and to make sure your vehicle is not overloaded.

Please advise the National Safety Team with any questions or concerns at safety@capnhq.gov. Report ALL Incidents using the online Mishap Notification (Form 78).



SAIB: CE-10-21

SUBJ: Propellers/Propulsers; Propeller Overspeed in Piston Engine Aircraft

Date: March 17, 2010

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin (SAIB) alerts operators, pilots, and aircraft manufacturers of concerns for an optimum response to a propeller overspeed in piston engine aircraft with variable pitch propellers.

At this time, the airworthiness concern is not an unsafe condition that would warrant airworthiness directive (AD) action under Title 14 of the Code of Federal Aviation Regulations (14 CFR) part 39.

Background

Recently, a single-engine aircraft experienced a propeller overspeed during cruise flight at 7,000 ft. altitude. The pilot reported that the application of throttle resulted in a propeller overspeed with no appreciable thrust. The pilot attempted to glide to a nearby airport and established the “best glide” speed of 110 knots (as published in the Pilot’s Operating Handbook). The pilot was unable to reach the airport and was forced to conduct an off field landing.

It was determined that the propeller experienced a failure that caused the blade pitch change mechanism to move to the low pitch stop position. This caused the propeller to operate as a fixed pitch propeller such that it changes RPM with changes in power and airspeed. The low pitch setting allows for maximum power during take off but can result in a propeller overspeed at a higher airspeed.

A performance evaluation of the flight condition was performed for the particular aircraft model involved in this incident. This evaluation indicated that an airspeed lower than the best glide speed would have resulted in increased thrust and enabled the pilot to maintain level flight.

There are numerous variables in aircraft, engines, and propellers, which affect aircraft performance. For some aircraft models, the published best glide speed may not be low enough to generate adequate thrust for a given propeller installation in this situation (propeller blades at low pitch stop position).

The graph below shows thrust versus airspeed for a typical propeller model set at a 12-degree blade angle and maintaining 2,700 revolutions per minute (RPM). From the graph, note that at over 118 knots this propeller is incapable of generating a positive thrust and airspeed has to be lower than 95 knots to generate enough thrust to overcome the aircraft drag, i.e. maintain level flight. While different propeller models have different thrust characteristics and different aircraft have different drag characteristics, the concept remains the same – the lower the airspeed the more thrust there is available at a given RPM.

A review of pilot’s operating handbooks from several aircraft manufacturers showed they did not include emergency procedures for a propeller overspeed. In cases where overspeed procedures were published, the procedure said to simply reduce throttle. More appropriately, the procedures should

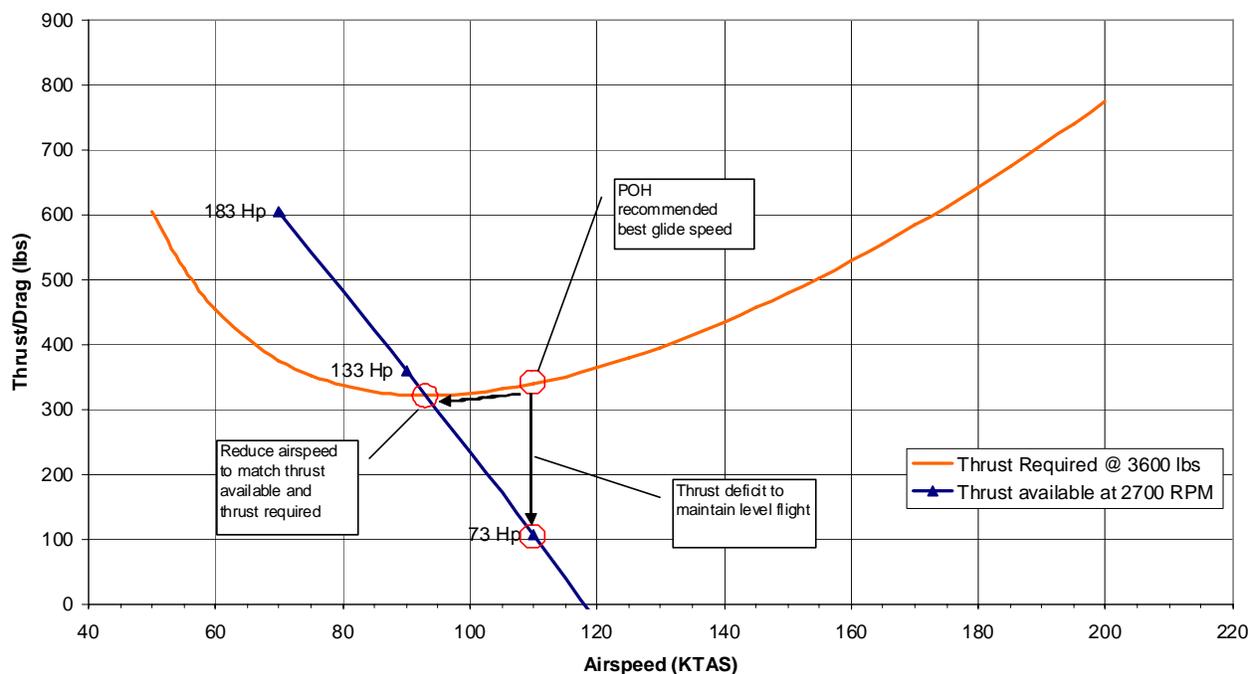
advise the pilot to control a propeller overspeed by throttle reduction and a reduction in airspeed as much as practical with an adequate margin above stall speed such that level flight can be maintained.

Recommendations

Pilots

The operators of aircraft with variable pitch propellers should be aware that in certain instances of propeller overspeed, the airspeed necessary to maintain level flight may be different than the speed associated with engine-out best glide speed. The appropriate emergency procedures should be followed to mitigate the emergency situation in the event of a propeller overspeed; however, pilots should be aware that some reduction in airspeed may result in the ability for continued safe flight and landing. The determination of an airspeed that is more suitable than engine-out best glide speed should only be conducted at a safe altitude when the pilot has time to determine an alternative course of action other than landing immediately.

Example of Propeller Operation on Low Pitch Stop
Estimated Thrust/Drag vs. Airspeed
 Gear & Flaps Up
 1000 ft., Standard Day
 Propeller on Low Pitch Stop of 12 Degrees



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