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NIGHT FLYING SAFELY PART 1

By Steve Kokkins BC-OAT

This article is based on one written by Joel Stoller for AOPA who is a Boeing 717 captain for Midwest Airlines. Joel has been a CFI for nearly 25 years, and has more than 17,000 flying hours.

This is Part 1 of this article, Part 2 next month.

Preparation:

Preparation is the key to successful night flight! When was the last time you brushed up on your night flying skills? Ninety-five percent or more of flight time logged by private pilots takes place in daylight, but the accident rate at night is several times higher. This seems to warrant a close review of night flying

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CARBON MONOXIDE THE SILENT KILLER

By Charles Ford BC-OES

Did you know that Carbon Monoxide (CO) is a deadly gas and causes many fatalities each year?

Most of us who read the news or watch TV are aware if one runs a car engine in a closed garage it is likely a dangerous level of Carbon Monoxide will build up in short order. The same thing can happen on boats, with an engine or generator running, whether moored or under way.

Deaths have been reported while resting on or swimming beside a swim platform while underway. High concentrations of CO have killed helmsman at the wheel in closed cabin with back door open due to exhaust fumes being sucked in by the so called Station Wagon effect.



(Check the Flag)

Persons taking a nap in the forward cabin while the boat is underway have succumbed

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PRE UNDERWAY CHECK LIST SAFETY

By Charles Ford BC-OES

A pre underway Check-off list is described in the Coast Guard Auxiliary Boat Crew Qualification Guide (M16794.52A) as part of task BCM-03-04-AUX. This example is for a typical patrol boat; however, to really be of use for operations it must be prepared and customized for your Auxiliary facility.

Using the Manual as a guide every detail of equipment which might possibly go awry must be listed for checking. To be effective a copy of the list should be in hand so each item will be inspected each and every time the boat prepares for duty.

Never assume your crew does not need a refresher, even though they been aboard many times before. As a matter of safety, when you start out for a test run, alone or with company, you too should go down the list item by item i.e. battery check, fuel level, running lights, PFDs, fire extinguishers, engine warm up, shift controls etc. it is always possible that someone,

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techniques. We humans are better adapted for daytime activities. However, night flight is less crowded both at airports and en-route, often turbulence and winds are lighter, and ATC controllers for flight following are less busy.

Night currency is a requirement for all USCG Auxiliary pilots. We'll explore the FAA regulatory aspects of night flying a little later, but we all know that in the USCG Auxiliary, all night flying on missions must be a two-pilot operation, with both pilots current for both instrument and night flying.

A two person, instrument rated and qualified crew is a big safety advantage at night. Use of Crew Resource Management (CRM) by the PIC and crew is a huge benefit considering the various tasks needed: basic flying, comms, navigation, systems monitoring, preflight planning, en-route decision-making, and accomplishing the specific mission. There are some fine-print exceptions to the "two-pilot rule", such as for solo-only positioning or logistics

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CARBON MONOXIDE

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due to the same vacuum, caused by the boats forward motion with deck hatches and port lights closed.

REMEMBER:

carbon monoxide gas is colorless, clear and odorless. It can render you unconscious in a few breaths in sufficient concentration and even a low density of CO can kill in minutes.

For safety sake. Be sure there is a clear air flow through all occupied spaces and that sources of CO (engines, heaters and stoves) are sealed from such spaces.

THE DVC-OE QUESTION OF THE MONTH

By Bruce Pugh DVC-OE

You are approaching a vessel with the following lighting configuration. A red light, above and to the right of this red light is a white light, and above that is a green light. Above and to the right is another white light. What are you approaching?

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Hank Demler, Editor
hwdemler@comcast.net

PRE UNDERWAY CHECK LIST SAFETY

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or even an animal, has been aboard and in your absence, touched, moved, or stolen something. Batteries run down, bilges take on water, fire extinguishers lose pressure, you will not know unless you have checked

As part of TCT all crew members should participate in this check-off. In an emergency any one of the crew may need to know what emergency equipment is aboard, where it is located and how it can be deployed.

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flights, but additional requirements then apply (see the USCG Auxiliary Air Operations Policy Manual, CMDTINST 16798.3E, Annex 1, I.2). Also, the PIC must always be a qualified Auxiliary Aircraft Commander. So, staying current on night/passenger carrying, and instruments, may require some private flying by Auxiliaries.



Night Vision

Chapter 8-1-6 of the FAA *Aeronautical Information Manual*, Medical Facts for Pilots, addresses a few concerns of pilots while operating at night. In darkness, vision becomes more sensitive to light; a process called *dark adaptation*. This usually takes 30 minutes in total darkness, but it can be achieved in 20 minutes under dim cockpit lighting. Red light

severely distorts colors on charts and causes difficulty when trying to focus on objects inside the cockpit, so (since the WW II era) white cockpit lighting is best for chart and instrument reading—but keep the overall cockpit illumination at your lowest comfortable level.

Cabin altitude pressures above 5,000 feet, smoking, exhaust fumes (carbon monoxide), and vitamin A deficiency also impair dark adaptation. Sudden exposure to a bright light ruins dark adaptation within seconds, so pilots should close one eye when a light (for example, a flashlight in the cockpit) is used, to preserve some degree of night vision. Age matters, too, so be honest.

When is "Night", and how do we stay current and legal?

Night for aviators is defined by bureaucrats as "the hours between the end of evening civil twilight and the beginning of morning civil twilight, as published in the American Air Almanac, converted to local time." Deciphered, twilight is about 30-40 minutes before sunrise and after sunset as commonly published.

Remember, to act as a pilot while carrying

passengers at night, you must have made at least three takeoffs and landings to a full stop in the preceding 90 days in the same aircraft category, class, and type, during the period beginning one hour after sunset and ending one hour before sunrise.

The one hour after and before is to insure it's really night.

Lights Needed

When old Tom Edison invented the light bulb, he later made all of this night flying possible. What lights do you need to fly safely and legally at night? Common sense dictates the answer here, but some are regulatory in nature. A safe crew always carries at least two working flashlights in the flight bag and a penlight in his or her pocket or on the flight suit. Ever tried flying alone with no panel lights except a penlight held between your teeth? That two-person crew helps again!

Next is to be sure that all required aircraft lights for night ops are installed and working. Check all lights on your preflight walk-around. Your crew mates will help (they walk and talk; you sit and twiddle switches). These

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include the position (nav) lights: left wing red, right wing green and aft/tail position white (surprise--just like boats). An anti-collision light system is also required for night (and day) operations, which may include one or more strobe and/or rotating beacons that may be either red or white. Landing and taxi lights are also checked.

Keep the bigger strobes off until cleared for takeoff. Strobes on at night while taxiing can harm other pilots' night vision. Use a checklist routine with your right-seater when you are ready to take the active runway: strobes and landing lights on, transponder on from standby, then: power normal and airspeed alive in the takeoff roll. While getting some currency at night with an instructor, simulate a "burned out" landing light approach and landing to a full stop. It can and does happen. You must now gauge your depth perception in the landing flare with the runway edge lights. If you regularly use simulators at your flight school to supplement training, choose

the night simulation if available to increase your confidence in a night cockpit and night flight scenario.

COMING NEXT MONTH

"Night Flying Part 2" with "Looking outside" "Airport Lights" and other Night Flying Tips.



ANSWERS TO DVC-OE QUIZ

- ♥ You are approaching the port side of a vessel engaged in trawling, underway or making way.
- ♥ You could be in inland or international waters.
- ♥ The Vessel is longer than 50 Meters (most likely but could be shorter).

Ref: Rule 26 Page 83 Navigation Rules.

US COAST GUARD AUXILIARY OPERATIONS CONTACT INFORMATION

| PROGRAM AREA | STAFF MEMBER | E-MAIL ADDRESS |
|---|------------------------------|---------------------------|
| Department Chief | David A. Elliot | DC-O@cgaux.us |
| Deputy Department Chief | Robert T. Shafer | DC-Od@cgaux.us |
| Aids to Navigation | Frank J. Larkin | frankjlarkin@verizon.net |
| Aviation | Byron A. Moe | byronmoe@comcast.net |
| Communications | William H. Scholz | w1hjcw@aol.com |
| Surface Operations | Gary A. Taylor | gtaylor@alaska.net |
| Education | Bruce C. Pugh | DVC_OE@yahoo.com |
| CG-3PCX Operations Division Chief | LCDR Kathryn C. Dunbar, USCG | Kathryn.C.Dunbar@uscg.mil |
| CG-3PCX Aviation and Recreational Boating Safety Branch Chief | LTJG Shannon F Scaff, USCG | Shannon.F.Scaff@uscg.mil |
| CG-3PCX Surface Operations Branch Chief | CPO John R. Dingley, USCG | John.R.Dingley@uscg.mil |

