

Nuts, Bolts, and Electrons

AMTs vs. OTCs

Understanding the Risk when Self-Medicating

You wake up from a restless night and it's there — the ominous tickle in the back of your throat. It is the first warning sign. It might be accompanied by a slightly stuffed up nose, or perhaps a general soreness in your lymph nodes and neck. Regardless, you know what is coming — you've been here before. You are getting sick.

But morning has come and you have work. So, like most people do, you reach for the medicine cabinet in attempt to arm yourself against the evil rhinoviruses that are invading your body. Maybe you will choose the latest in over-the-counter (OTC) antihistamines, or that popular bedtime, coughing, stuffed up, so-you-can-sleep medicine. Whatever you choose, as an aviation maintenance technician (AMT), you need to be aware of the hidden dangers of OTC medicines and what the risks might be on the job.

The guidelines for aircrew are explicit and, although the FAA does not publish a master list of approved medicines, 14 CFR prohibits flying while you have a condition or take a medication that might affect flight safety. Unfortunately, the guidance for ground and maintenance crews isn't as well defined, which often leaves the decision of medication usage up to the individual.

Labels and Lug Nuts

Rule number one of medication-taking: Always read the labels! The Food and Drug Administration (FDA) goes to great lengths to ensure that all drugs list indications (benefits) and contradictions (warnings) on their labels. In addition, labels must list active and inactive ingredients, dosages, and uses. The summation of these items can usually help you decide if a particular drug is worth considering when self-medicating. Studies show, however, that only about 54 percent of adults bother to read the official labeling on the back of the box. Instead, they defer to the more commercial advertising on the front. Those who do read labels often stop shortly after dosage and time requirements, and some note that they can't make sense of the lists

even after reading them in their entirety. The FDA has acknowledged this issue and is working with pharmaceutical companies to ensure the labels are both prominently placed and easier to understand. As for the rest, that is up to you.

Going back to the previous scenario — you reach for the gel-tabs known for easing cold symptoms, and for your favorite pain-reliever. You flip over the cold medicine box and begin to read. You see that it is designed to ease a cough due to minor throat and bronchial irritation. It should also help relieve a headache, minor aches and pains, a fever, and a runny nose. This all sounds great and just what you need, so what should you do now? The answer is *read on*.

The Fine Print

You do, and you find that the active ingredients in the cold medicine are acetaminophen, dextromethorphan, and doxylamine succinate. The pain meds list acetaminophen as the primary ingredient. Normally, you would settle on taking a dose of each medicine, and hurry off to work hoping the meds hold until you can get back home and back to bed. However, as you read even further down the

Drug Facts	
Active ingredient (in each tablet) Chlorpheniramine maleate 2 mg	Purpose Antihistamine
Uses temporarily relieves these symptoms due to hay fever or other upper respiratory allergies: <ul style="list-style-type: none"> ■ sneezing ■ runny nose ■ itchy, watery eyes ■ itchy throat 	
Warnings Ask a doctor before use if you have <ul style="list-style-type: none"> ■ glaucoma ■ a breathing problem such as emphysema or chronic bronchitis ■ trouble urinating due to an enlarged prostate gland 	
Ask a doctor or pharmacist before use if you are taking tranquilizers or sedatives	
When using this product <ul style="list-style-type: none"> ■ You may get drowsy ■ avoid alcoholic drinks ■ alcohol, sedatives, and tranquilizers may increase drowsiness ■ be careful when driving a motor vehicle or operating machinery ■ excitability may occur, especially in children 	
If pregnant or breast-feeding, ask a health professional before use. Keep out of reach of children. In case of overdose, get medical help or contact a Poison Control Center right away.	
Directions	
adults and children 12 years and over	take 2 tablets every 4 to 6 hours; not more than 12 tablets in 24 hours
children 6 years to under 12 years	take 1 tablet every 4 to 6 hours; not more than 6 tablets in 24 hours
children under 6 years	ask a doctor
Other information store at 20-25° C (68-77° F) ■ protect from excessive moisture	
Inactive ingredients D&C yellow no. 10, lactose, magnesium stearate, microcrystalline cellulose, pregelatinized starch	

labels, you realize that this might not be the best plan after all.

Warnings on the cold medicine expressly discourage mixing it with another drug containing acetaminophen. Doing so could damage your liver. Next you read that you might incur marked drowsiness when taking this particular drug. A quick Internet search reveals that the active ingredient, doxylamine succinate, is an antihistamine that

can encourage lethargy.

This would be good news, and in fact desired if you were taking it before bed.

However, you plan to work a

full day, so being drowsy on the job is not an option. In fact, another warning on the label cautions against operating heavy machinery or driving. Your plan to install a new engine on a Cessna 182 that day certainly requires you to be at the top of your game. That decides it, and both medicines go back in the cabinet. So now what do you do? Are you left to brave the workday cloudy-headed and runny-nosed?

Gotta Keep 'Em Separated

“The Offspring” lyrics aside, a great way to set yourself up for success is to organize your medicine cabinet beforehand, and to keep the contents separated. Keep a set of meds that will ease symptoms and encourage sleep — always a key factor in getting better — on one side of the cabinet, and the non-drowsy, work-friendly kind on the other. This way you always know which one to grab depending on what part of the day it is.

Prior to stocking your cabinet, review and discuss your choices with your health care provider to ensure that each medicine is right for you. The last thing you’ll want is to use a drug that interacts negatively with something else you might be taking, or with any other ailments you might have. Medicinal interactions can fall into any of three harmful categories.

- **Duplication:** This means if you take two medicines that have similar active ingredients, you may get more of an ingredient than you need. Duplication with acetaminophen is a common example.
- **Opposition (antagonism):** This is when the active ingredients in different medicines have opposite effects on your body. For example, OTC decongestants can oppose certain medicines intended to lower your blood pressure, because decongestants may raise your blood pressure.
- **Alteration:** This is when a medicine may change the way your body absorbs, spreads,

or metabolizes another medicine. For example, aspirin can change the way certain prescription blood thinning medicines work.

The Others

Awareness doesn’t end with OTC meds. Some other hazards to be aware of include psychoactive drugs, such as anti-depressants or anti-anxiety medications. These types of prescription drugs are specifically designed to act upon the brain to cause changes in behavior, mood, and consciousness, which may be counterproductive on the job. The same holds true for psychostimulants, such as amphetamines or amphetamine-like drugs. Quite a few of these are an automatic “no-go” for operators and for air traffic controllers, but they bear consideration for ground crew or maintenance positions as well.

The same is true for the heavier duty pain relievers. Oral, injectable, and topical pain relievers, and in particular those containing opiates (e.g., codeine, oxycodone, morphine), bind to specific brain receptors that affect your perception of pain, ability to think clearly, mood, and muscle coordination. All of these can most certainly have an adverse effect at work — so much so that this is one of the categories that maintenance companies and agencies, to include the Department of Transportation and the FAA, screen for in mandatory drug testing.

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His advice is that if it numbs the pain, then it probably numbs the brain. That means it is best to be avoided in the workplace. Although the consequence of a poorly executed maintenance action might not be as immediate or apparent as it could be in the flight operations arena, it is still a hazard. And it is your responsibility to ensure that the strongest and most capable tool in your crib — *your brain* — is alert and at its best.

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