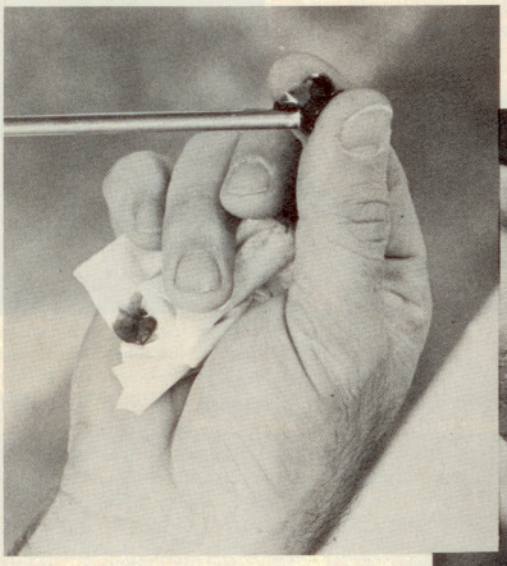
'Probable Cause: Inadequate Preflight...?'

Author says that, on the average, there are six vital things missed by most pilots when they preflight their aircraft

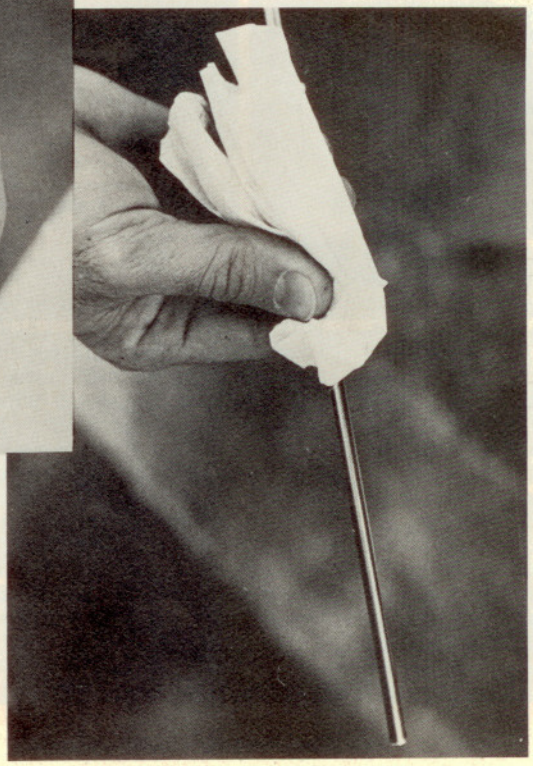
by W. E. SPRAGUE / AOPA 415050

All photos by the author

When preflighting, when was the last time you looked inside the cowling for signs of oil "pooling" in the bottom, or checked the security of your mags and battery . . .?



Feeling the oil when checking can reveal the presence of sand, dirt, or metal bits—all trouble signs.



Little things mean a lot . . . like wiping the oil dipstick before taking a "reading." Merely pulling the stick, especially if the engine is warm, may not tell you how much oil you really have.

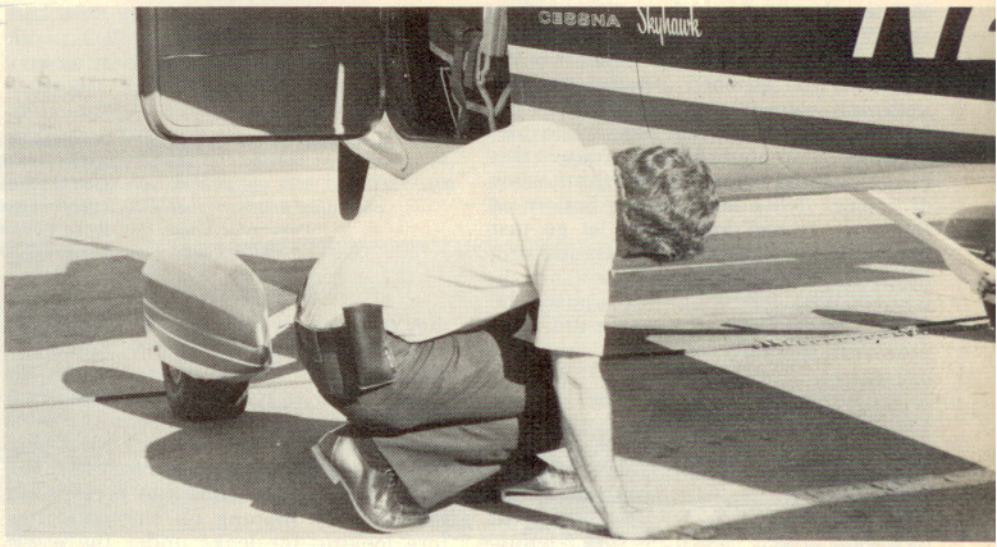
■■According to an old saying, "Familiarity breeds contempt." And when it comes to preflighting airplanes, it's all too often true. In fact, all too often *tragically* true.

Granted, you don't often find the specific phrase "Probable cause: inadequate preflight" appending the final page of accident reports these days. Conse-

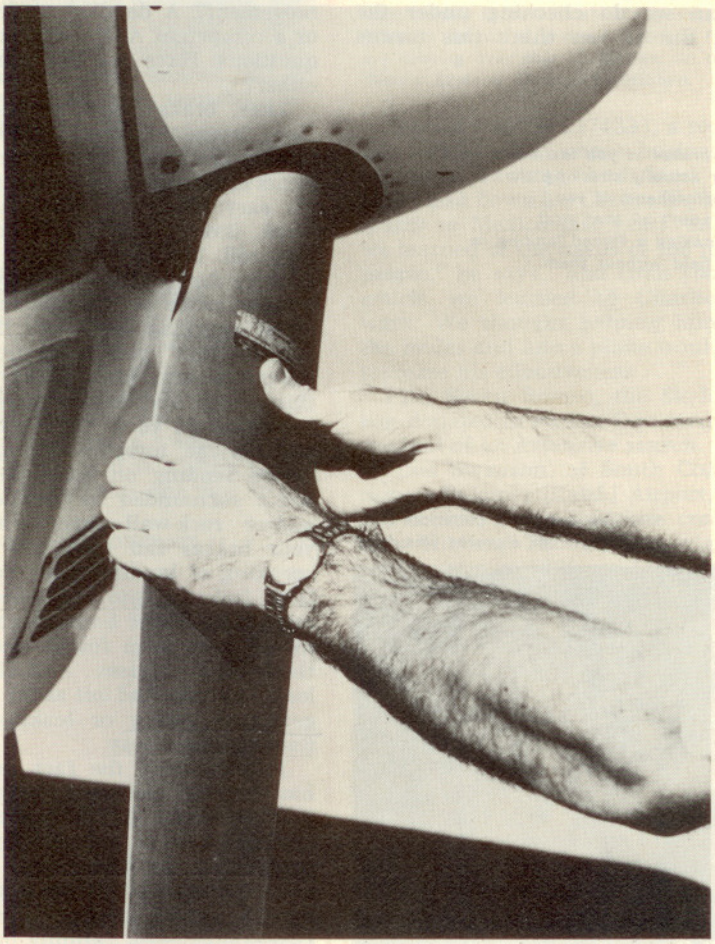
quently, we tend to relegate the horrifying drama of in-flight structural failure —which the pilot's mind commonly associates with faulty preflighting—to aviation history, circa 1935. And even then, we tell ourselves, it only happened in the movies. Yet aside from the fact that structural failure is indeed a reality, and one that still happens once in awhile (not infrequently because something like a bent strut or an absent piece of safety-wire was overlooked in preflighting), you might consider the following bit of data, courtesy of the National Transportation Safety Board (NTSB):

Where just nonfatal accidents are concerned, of the 10 most frequent cause-factors, *inadequate preflight preparation and planning ranks second!* And while "preparation and planning" admittedly cover more than the preflight inspection, do give a few moments thought to all those cases of engine failure and fuel exhaustion that keep happening day after day after day—then draw your own conclusions.

Whatever officialdom may or may not say about it, the relationship between neglected or inadequate preflighting and countless accidents, both fatal and otherwise, is—or certainly should be—obvious. What is perhaps not quite as obvious is the fact that it is most often the *experienced* pilot and not, as might be supposed, the student or new private pilot who fails to do a proper job of inspecting his bird. The experienced eye becomes all too easily jaundiced; familiarity breeds, if not contempt, at least complacency. This is not mere conjecture on my part; it's a fact of human psychology. Ask any "shrink." Moreover, it's a fact I've personally verified, both through self-observation, and by observing my fellow pilots. When it comes to preflighting, we sometimes do it so unseeingly, so perfunctorily, that, on the average, *there are at least six vital things we miss in every inspection!*



When was the last time you went "on all fours" to check the belly, not only for damage to the structure, but also for excessive oil streaking . . .?



Checking the prop for nicks, cracks, and gouges is S.O.P., right? But on constant-speed props, do you ever give the blades a twist to check for "flop"? And, on your bird, how much "flop" is permissible . . .?

You doubt it, you say? Okay, maybe you *are* an exception. But just for the gay old helluvit, check yourself against the following items:

We always check the oil on every preflight, right? But how many of us wipe the dipstick first? Just pulling it out for a quick look can easily give a false reading. And have you ever bothered to feel the oil hanging from the end of the dipstick? That's right, *feel* it—for grittiness that could be sand or bits of metal. And on the subject of oil, when was the last time you looked inside the bottom of the cowling to see if the dark, slippery stuff was "pooled" there? Or got down "on all fours" to see if it was streaked along the ship's belly? Oil is a very funny thing; it can find the tiniest of spots through which to leak, then make that leak bigger. Sometimes very suddenly. And engines have a nasty habit of "seizing up" without it (usually on a very dark night, over the lousiest terrain imaginable).

Cowling interiors are nesting places, too, for other vital things usually missed in preflights. How many of us think to check for a simple thing like a well-secured battery? Loose or "tumbled" batteries can mean more than just electrical failure—bad enough in itself. Depending upon battery location, it could mean fire in the air. Or, thanks to acid erosion, even the sudden parting of a control cable or two! And how about your engine mounts? They're under that cowling, too. True, it happens very, very rarely, but "losing an engine" can be more than just a multi-rated pilot's figure of speech. And when a powerplant goes hurtling earthward on

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Preflight...?'

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its own, it does strange and usually fatal things to the airplane's center of gravity.

Then, of course, there are the "mags." But we always check those two goodies, right? Uh-huh, on the "runup." But what about under the cowling? When was the last time you grabbed a fistful of magneto and gave it a gentle yank? What for, you ask? Well, one day, while preflighting a rented bird, I found this funny-looking, round-shaped thing—one of a pair—lying loose in the bottom of the cowl. It had apparently let go just as the previous renter had been shutting down the engine. Sure, I'd have caught it the instant I fired up. But suppose the thing hadn't come off when it did; suppose it had hung on until I was airborne and climbing out, say, IFR . . .?

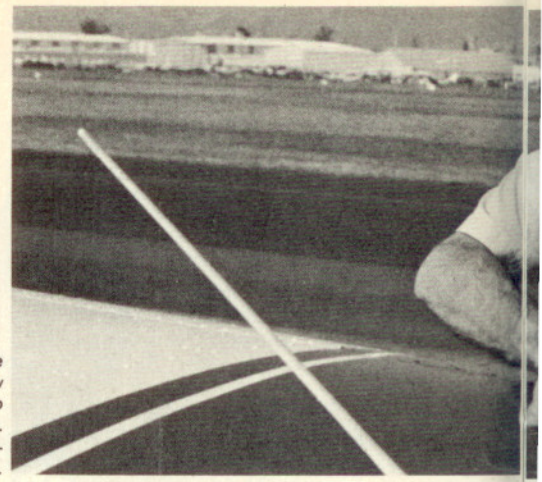
There are a couple of other engine compartment preflight items which, if neglected, can really make for a hot time in the air. And I mean, literally. Such as exhaust-gas leaks combined with leaky fuel lines. Yet, how many of us bother to look for those telltale white, powdery-looking streaks around head and manifold gaskets? Or really eyeball the exhaust stacks? Sure, regarding the latter, we usually give them a tug or two in going over the outside of the cowling—which may tell us if they're loose or not, but won't tell us much about any small yet dangerous cracks in their under-the-cowling "roots." And as for fuel lines, how often do we do more than give them the most superficial of glances, if that? On a ship with an electric fuel pump, for example, when was the last time you pressurized the lines by flipping on the pump before looking for leaks under the cowl?

Vital inspection points are, of course, not confined to engine compartments. Fact is, in preflighting, we spend much more time going over the outside of the ship than we do checking under the cowling. But if you think this means the average pilot misses fewer preflight items in checking the plane's exterior—well, here are a few more things you might ask yourself about:

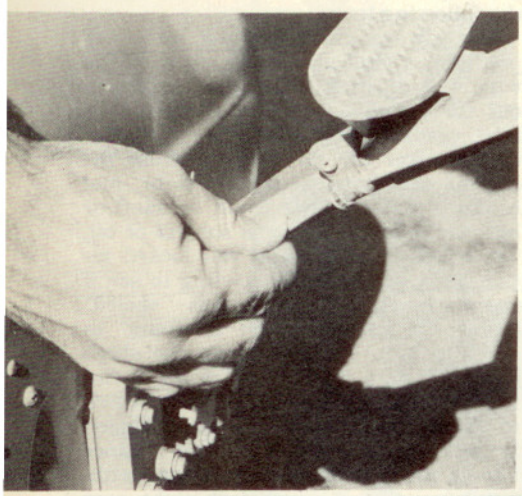
Checking the prop for nicks, cracks, and gouges is S.O.P. in every preflight, right? But do you ever grab hold of the blades of a constant-speed prop and check them for "flop"? A certain amount of movement perpendicular to the diameter of the whole propeller is, of course, permissible and even desirable in the blades of certain constant-speed props. But which props? And how much movement? A detailed owner's manual or a competent A&P could answer those questions. Have you ever checked with either?

Tires, brakes, and wheels are three more "standard" preflight items all too often given short shrift. Granted, wheelpants make tire inspection difficult. Still, it's easy enough to pull the ship forward, slowly, and look at the tires as they roll. But how often do we bother? And as for brakes, we may try them once or twice on the taxi-out, but what about checking the brake lines beforehand? "High" pedals are no guarantee against leaking brake fluid. And if you think tires and brakes aren't all that important in your scheme to live to a ripe old age, imagine having to make a forced landing on some postage-stamp space surrounded by boulders, timber, and/or rock-wall fences—and having your brakes fail or a tire blow. And speaking of landing gear, do you regularly look up into the wheel wells on retractable birds? Some mighty peculiar things have been found wedged up in those dark recesses. And if you don't look, you may find out about that broken gear-door spring or leaking hydraulic fluid the hard way.

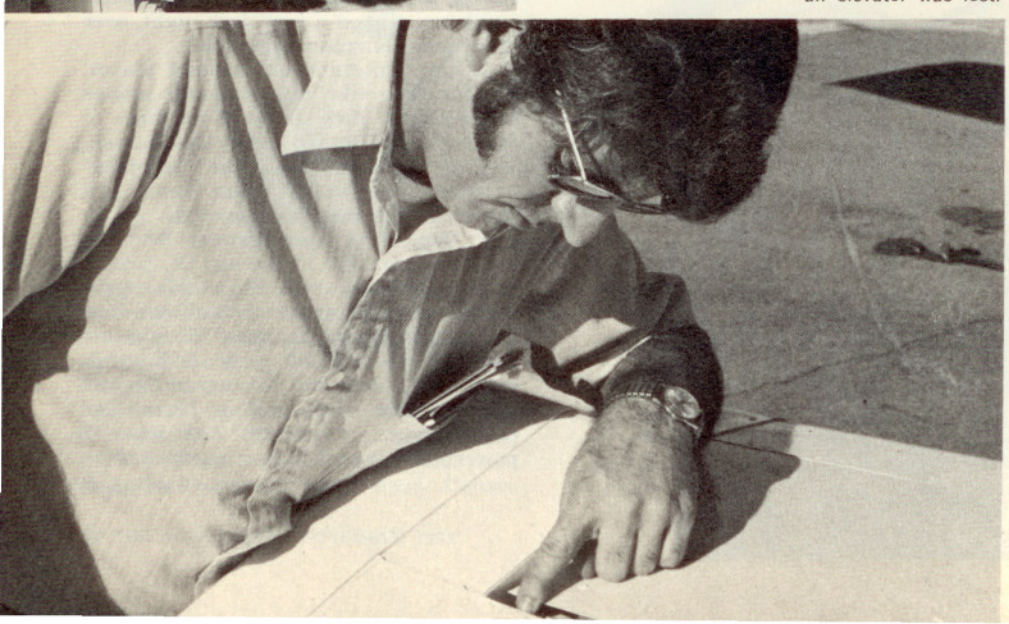
Judging from the fact that fuel exhaustion has become a veritable general aviation cliché, the most-often-neglected preflight item is undoubtedly visual inspection of the fuel supply. I can still hear the voice of my long-ago flight instructor gruffly saying: "There's no excuse—*none!*—for running out of gas in a plane, dammit!" And short of having weather suddenly conspire against you in a nasty IFR situation (and even that's debatable!), I still find myself in agree-



Depending on the gas gauges, the word of the lineman, or the last person who flew the aircraft, is a good prelude to becoming another "fuel exhaustion" statistic. Poke your finger into those fuel-tank-filler-necks each and every time.



"Toeing" the brakes as you taxi out is no substitute for actually checking the brake lines beforehand. If you think brakes aren't all that vital, think about making a forced landing in a tight-sized field without them.



"For the want of a cotter-pin . . ." an elevator was lost?

ment with him, lo, these many years later. Yet, how often have you neglected to poke your nose, and maybe a finger, too, into those fuel-tank-filler-necks? How often, instead, have you trusted your gas gauges, or the word of the lineman, or, with a rented bird, the say-so of the last guy who flew the plane? At least once, I'll bet. And once, as they say, is all it really takes.

There are yet other items that are doubtless missed in the average preflight, but the point, I think, is clear by now: When it comes to preflighting, far too many of us look, but we fail to see. Why? Because as our logbook gets fatter, our awareness gets thinner. What we need, it would seem, is something to jar us into a new alertness.

I recall a ditty from childhood that went . . .

For the want of a nail,
a shoe was lost;
For the want of a shoe,
a horse was lost;
For the want of a horse,
a rider was lost;
For the want of a rider,
a battle was lost;
For the want of a battle,
a kingdom was lost—
All for the want of a nail!

Maybe what we need is a mandatory placard in every cockpit—one that starts something like . . .

For the want of a cotter-pin. . . . □

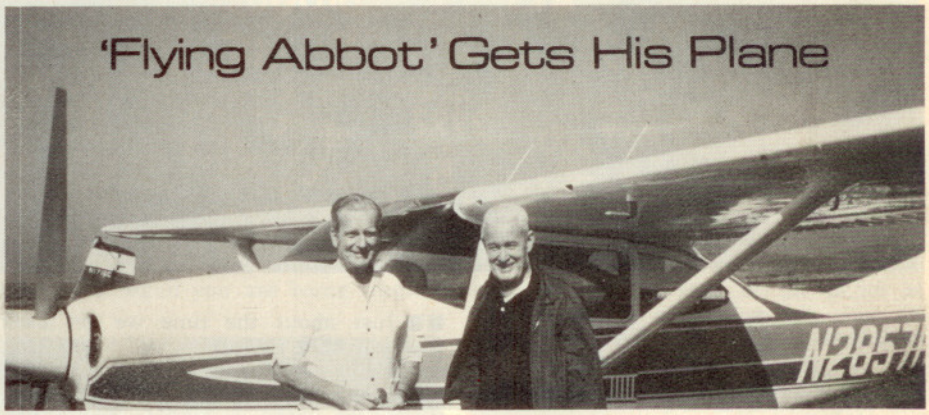
THE AUTHOR

W. E. ("Bill") Sprague holds a commercial pilot certificate, with ASMEL and instrument ratings. He has logged more than 1,000 hours and has been checked out in nearly 40 different aircraft. A professional writer and author of a number of "paperback" books, Sprague may be remembered by readers for his August PILOT *article, "Primer On Lease-Back Ownership." Though a comparative newcomer in the field of aviation writing, he has a lengthy list of credits in nonaviation publications. Sprague resides and works in Panorama City, Calif.*

'Flying Abbot' Gets His Plane

■■ Thanks to fellow AOPAer Joe Hibben, "Flying Abbot" Charles V. Coriston [see "Our Interesting Members," May 1971 PILOT] has a beautifully equipped Cessna 182 Skylane for use in his work to improve the quality of life for Mexico's rural poor.

When the PILOT article was written last year, the priest-pilot (AOPA 224365) had been grounded by the demise of the Super Cub he had been flying into the remote mountain villages of the Roman Catholic Archdiocese of Oaxaca. The area embraces some one million native Indians, many of them living in severe poverty in isolated rural settlements, effectively cut off from the mainstream of Mexican life.



These happy faces indicate it's blessed to give and to receive. AOPAers Joseph W. Hibben (left) and Father Charles V. Coriston, O.S.B., are smiling over this 57 Romeo, an ultra-clean and beautifully equipped 1967 Cessna Skylane donated by Hibben.

Hibben (AOPA 237433), a resident of La Jolla, Calif., whose business is investment banking and land development, had flown his Cessna Skyknight on a trip to Mexico last year. "In Oaxaca we learned of the needs of the mountain people," he says, "and from your AOPA article we learned of Charlie's great work. We thought helping him get off the mules and into a plane would greatly increase his effectiveness . . ."

Five Seven Romeo, the Skylane Hibben donated to Father Coriston, was the product of an extensive search.

"Gus Swanson, of South Coast Aviation at Palomar [Calif.] Airport, combed the country for a low-time creampuff," says Hibben. Though the original objective was a 1968 or 1969 model, of the various possibilities uncovered, the best buy turned out to be a 1967 model. "It had 410 total hours and had been meticulously cared for. The log was detailed and clean; the engine, skin, and interior [were] all like new . . . The ship had more equipment than we needed—dual omnis, two Narco 360 transceivers, corrected airspeed indicator, transponder, etc., some of which is not usable in the Mexican mountains—but it had no ADF," an essential navaid for flying there.

The perfect last touch for 57 Romeo was provided by Hibben's minister, Rev. Louis Evans, of the La Jolla Presbyterian Church, who obtained a donation of the needed ADF. The day after Father Coriston arrived from Mexico to pick up the Skylane, Evans (who is also a pilot) and Hibben flew in to Palomar Airport, where the priest was taking a couple of hours' refresher training in the aircraft. There, in an impromptu interfaith ceremony, the two ministers jointly blessed 57 Romeo for its new mission.

Hibben himself is a private pilot, multi-engine and instrument rated, and has logged more than 2,000 hours. His wife, Jean, has taken the AOPA Pinch-Hitter Course. Together they have flown their Skyknight, "Queenie" (N3316Q), "all over the western states, particularly California and Colorado, where we operate a ranch near Aspen," as well as to Alaska and the North Slope, Puerto Rico, and Mexico.

"The kind of work being done by Charles Coriston, to help people help themselves, can greatly improve the image of the *gringo*" south of the border, Joe Hibben believes.

In a recent newsletter to friends in the United States, Father Coriston reported on some of his work, which has expanded to other areas of Mexico in addition to Oaxaca. Among current projects made possible by North American friends' generosity, he said, were assistance to farmers in the Diocese of Tula for their cooperative purchase of fertilizer and corn; aid to a team working with the Indian population around Ixmiquilpan and helping to establish a local industry; aid to poor university students in Mexico City, who often need small loans for books, etc. ("Sometimes $10 can mean the difference between continuing or dropping out"); "Charity Disorganized," an informal setup to provide personalized help "for those who have nowhere else to turn"; and social work in a prison in Sola de Vega, where food money is provided for the prisoners, and classes have been started in literacy and trades. "In Oaxaca, all the programs are going along . . . In Chiapas we help Nick Andersen's Ranch for Boys [an orphanage] . . . In Ciudad Altamirano the old folks' home has beans and tortillas regularly . . ."

That sounds like a good bit already, but, says the Flying Abbot, "With the plane I will be able to get a lot more done!" —E.C.