



Max-Performance Flying

We've been covering test flying of your type certificated airplane to determine how it will perform, but another reason to conduct flight tests is to learn how you will perform as well. Here are some examples:

SHORT/SOFT-FIELD TECHNIQUE

If you're planning a flight that requires a short-field or soft-field technique, conduct some flight tests of your technique and the resulting airplane performance in the days before you need to perform "for real." Start at longer runways and then proceed to shorter ones as you gain recent experience. Add aircraft weight as needed until you're flying tests at the weights you expect to operate on your trip. If density altitude will be a factor, fly to a higher density altitude airport at a lighter weight, if possible, to test your abilities before you'll need them "for real."

HIGH-AND-HOT TECHNIQUE

You can also approximate high density altitude performance by taking off at reduced power, using a very long runway with no obstacles. But this is only an approximation, because it matches reduced engine power at altitude but not the reduced efficiency of wings and propellers, or the higher true airspeeds that result in shallower climb angles and increased landing distance when flying the correct indicated airspeeds.

EXTREME CONDITIONS

Crosswinds figure in a huge percentage of general aviation mishaps. Crosswinds are also a form of maximum-performance flying, and are limited primarily by the pilot's ability, not the design of the airplane. Planning a windy-weather flight? Before your trip, make some flight tests of local airports using runways with increasingly strong crosswind components, until you arrive at the maximum crosswind component you can easily handle. Then, knowing you arrived at this maximum only by gradually building up to it immediately prior to the final test, knock two or three knots off that maximum and call the reduced figure your current, flight-tested maximum crosswind limitation.

There's another term for this sort of pilot-abilities flight test we all should do more regularly: practice.