

## Tips on 182 Jump Plane Wingtips

*by Ed Scott*

Cessna utilized a basic rounded wingtip for its 182 from its first 1956 model until 1970, when it went to a conical camber wing tip. The aircraft maker had researched and flight-tested various wingtip designs, looking for performance improvements. They didn't find any. But their marketing department dictated a new conical camber tip with a slight droop anyway. The reason? The added surface area allowed them to add a "CESSNA" logo that could be seen on the ramp.



Figure 1: Original 182 Wingtip



Figure 2: Cambered Cessna Wingtip

A variety of after-market wingtips are available for the Cessna 182. For jump plane owners, the two most prevalent are the Madras Super Tip and the Wing-X wing extension. Here is some information about both.

### Madras Super Tip

In 1960, the Demers brothers of Madras Air Service in Madras, Oregon first STC'd a severely drooped wingtip that they called the Madras Super Tip, eventually producing them for a variety of airplanes, including the 182. The company claimed a variety of climb and cruise speed improvements with the Super Tip's ability to reduce wingtip vortices. Many DZ owners added a set of Super Tips to their 182s, and while some found the added performance elusive, nearly all will swear to the enhanced slow-speed control provided by the Super Tips. Here is a reprint of my 1995 *Parachutist* article after putting the Madras tip on my 1957 C-182: [Madras Super Tips.pdf](#). Though the Madras Super Tips no longer appear to be in production, they can easily be found in the used market. To this day, many jump 182s sport the Madras Super Tips.



Figure 3: Madras Super Tip

### Wing-X Wing Extension

Air Research Technology Inc. sells the Wing-X wing extensions for several Cessna models, including the 182. More than a simple wingtip replacement, the Wing-X adds a foot and a half of span per side, for an additional 12 square feet of wing area. The mod includes hardware that is added mid-span to reinforce the main spar to handle the added wing loading. Air Research, too, claims enhanced performance—lower stall speed, increased

climb rate and cruise speed, but the big benefit for jump plane owners is a gross weight increase, from 2,650 lbs. (2,550 for the '56 model) to 2,950 lbs. for the 1956 through 1961 models. The '62 to '69 models, too, enjoy a gross weight increase from their 2,800 lbs. to 2,950 lbs. (Starting with the '70 model, the gross weight is 2,950 lbs.)

For pilots of some weight, the Wing-X tips offer salvation. With the 2,650 lb. gross weight of early 182s, jump plane operators always sought lighter pilots. 150 lbs. or less was ideal; 170-180 lbs. was often the upper limit. With Wing-X tips installed, 200-210 lbs. is now the upper limit.

Some pilots who fly Wing-X equipped 182s note more sluggish aileron response, particularly in gusty conditions. Looking from behind, you can see that, while the wing is extended, the ailerons are not. So, you have more wing (and more lift) but the same amount of aileron effectiveness. Still, the gross weight increase outweighs the less sporty banking ability.

A part of your preflight inspection should always include checking the security of the screws holding on the wingtips. There are incidents of wingtips of all types coming loose in flight.



Figure 4: Wing-X Wing Extension

Author: Ed Scott, founder of Jumpers Away jump pilot school. [JumpersAway.com](http://JumpersAway.com)