DEMERS' SUPER TIPS

Phone
Area Code 503 475-2360

MADRAS AIR SERVICE

1914 N. W. Demers Drive
MADRAS, OREGON 97741

Demer's "SUPER TIPS" Add These Improvements To Your Airplane Performance

(FAA, PMA, and STC Approved)

- Cruise Speed Increased 7 - 10%
- Rate of Climb Increased 20%
- Stability Improved by 50%
- Reduces Take Off Roll 20 - 25%
- Stall Speed Reduced By 20%

STC'd

- BEECH: 33, Basic 35, A35, B35, C35, D35, E35, F35, G35, H35, J35, K35
- CESSNA: 150, 152, 170, 170B, 172, 175, 180, 182, 188, 185, 205, 206, 210
- PIPER: PA-11, PA-12, 14, 16, 18, 19, 20, 22, 24, 25
- PIPER: PA-28 (140-150-160-180-180R-200R)
- STEARMAN: A-75, ANI-2, National Hilift
- STINSON 108-1-2-3

SPECIAL ORDER

- AG-CAT
- SNOW
- WEATHERBY
- DOUGLAS B-26

NOTE

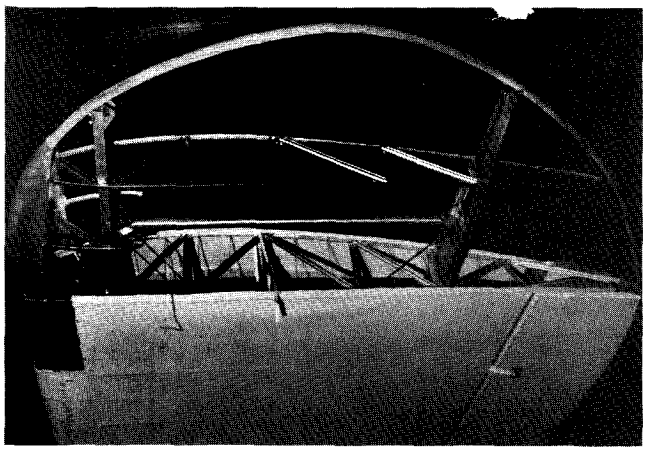
Special order aircraft are not covered by Madras Air Service STC or PMA. Owner will have to apply for a one time approval.

For Information and Prices Write or Phone

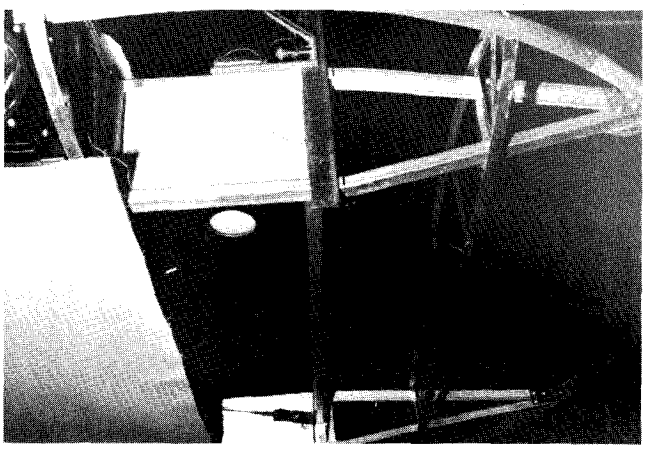
Madras Air Service (See Cover)

PIPER ONLY

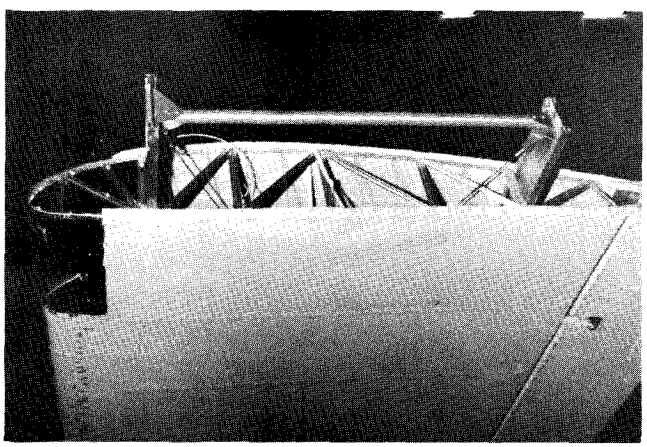
Madras Air Service **Page 1 of 3**
Installation Instructions **Dated 1-22-70**
Fiberglass Super Tips **Model 104**
Aircraft: Piper



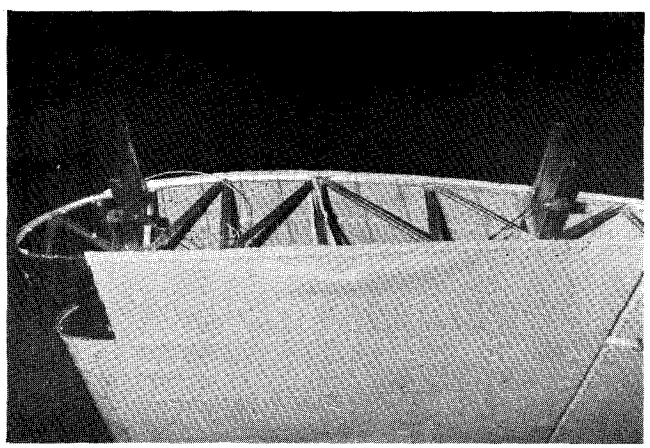
Remove nav. light assembly and save for later use.
Remove nav. light mounting bracket and discard.
Cut off wire 4" from end. Save wire and fitting.
Remove fabric outboard of aileron as shown.
Note: If equipped with landing light, frame and plexiglass lens must be removed.
Remove small channel braces and save for later use.
Cut reinforcing tape and tie at second rib.
Pull nav. light wire back out of the way.



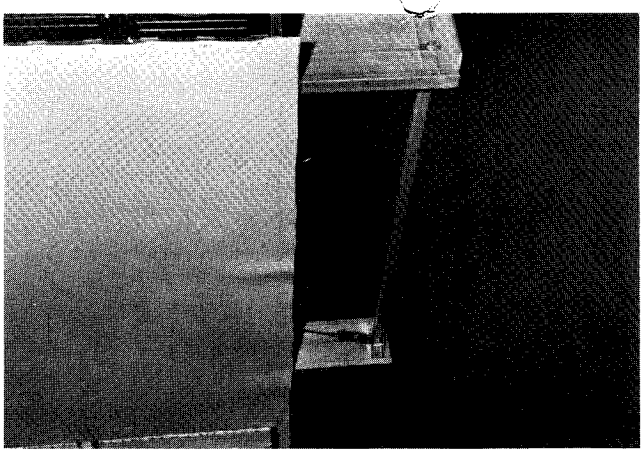
Remove leading edge skin.
Remove screws that hold wing tip bow at leading and trailing edge. Also small nails at trailing edge.
Remove nose rib forward of compression member.
Mark spar caps to be sawed off outboard of compression rib with square resting on top, as shown in photo, even with the center portion of the spar.
Proceed with sawing off the spar tips.
Tip should now come off.
File ends of spars square if needed.

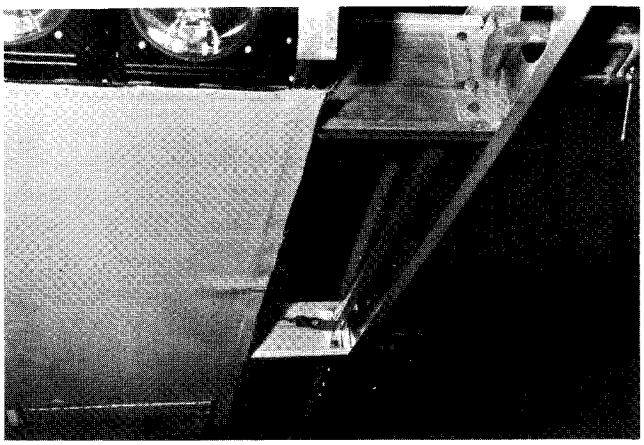


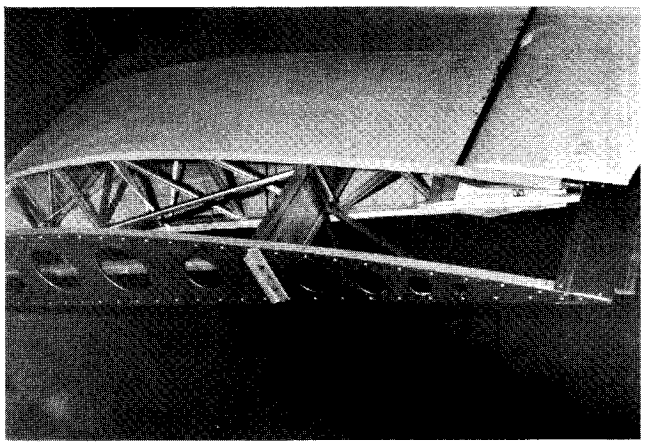
Loosen jamb nuts on diagonal brace wires and back off adjustment 5 turns each.
Bend safety tabs back from bolt heads that fasten compression rib to spars.
Remove screws from small angle.
Remove bolts, small angles, safety tabs and save for later use.
Slide compression rib out.

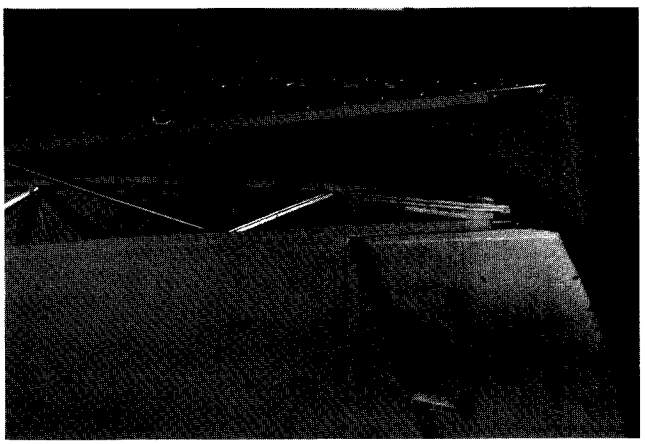


Position 104-2 angle against front face of front spar with longer side parallel to spar and protruding beyond spar end 1/8". Mark position of 5/16" hole with pencil from backside. Remove and drill 5/16" hole in angle.
Repeat same procedure for 104-3 angle except on rear face of rear spar.
Place 5/16" bolt with safety tab into new angle.
Discard old angle.
Bend long ear of safety tab around inboard edge of angle.









PIPER ONLY

Madras Air Service
Installation Instructions
Fiberglass Super Tips
Aircraft: Piper

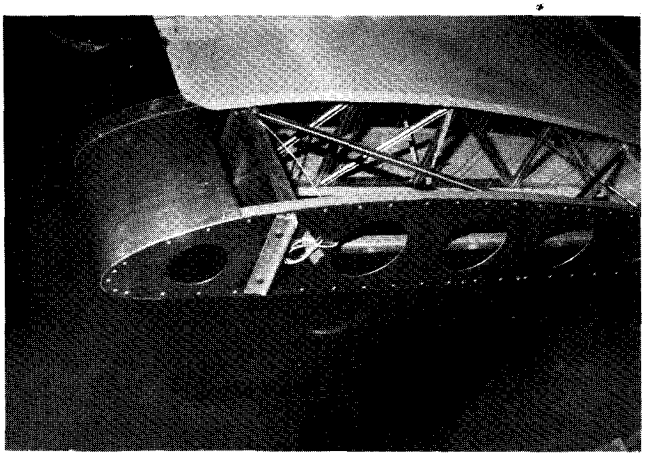
Dated 1-22-70
Model 104

Slide compression rib back into place. Line up diagonal brace wire attachment and assemble 5/16" bolts safety clip, angle, spar and compression rib.
Snug bolts making sure everything is square.
Drill 3/16" holes above and below compression rib through triangle brace, spar and angle.
Install 3/16" x 5/8" bolts and elastic stop nuts in these four holes.
Tighten 3/16" bolts and nuts.
Tighten 5/16" bolts and bend safety tab around bolt-head.
Tighten diagonal brace wires 5 turns as was originally loosened. Tighten jamb nut.

Place rib on end of wing with flange inboard, holding in place by 2 "C" clamps to previously installed angles.
Line up leading edge of new rib with long straightedge.
Position new rib for up and down by using straightedge over other ribs and moving new rib up or down to line it up.
Tighten "C" clamps. Drill 3/16" holes thru angle and rib about ½" from upper and lower edge.
Remove rib. Clamp smaller angles 104-4 and 104-5 to 104-2 & 104-3 and drill to match.
Remove clamps and small angles.

Assemble rib with small angles on outboard side with 3/16" x 5/8" bolts and elastic stop nuts. Tighten bolts. Install small channel braces. Remove small screws holding #2 rib to spar. Fasten one end at these points and other end of channel to new rib with #4 self tapping screws.

Position Super Tip on rib holding in place with several "C" clamps. Fit 104-6 trailing edge into place and mark forward edge position on ribs so trailing edge will be even and square with trailing edge of Super Tip.
Remove Super Tip.
Trim as needed and install the 104-6 trailing edge piece #4 sheet metal screws.



PIPER ONLY

Madras Air Service
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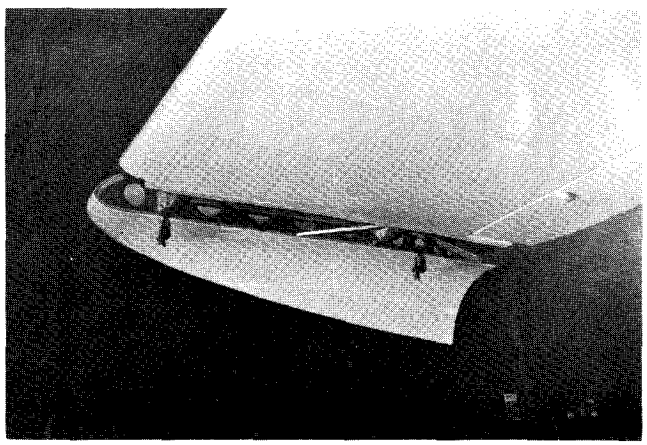
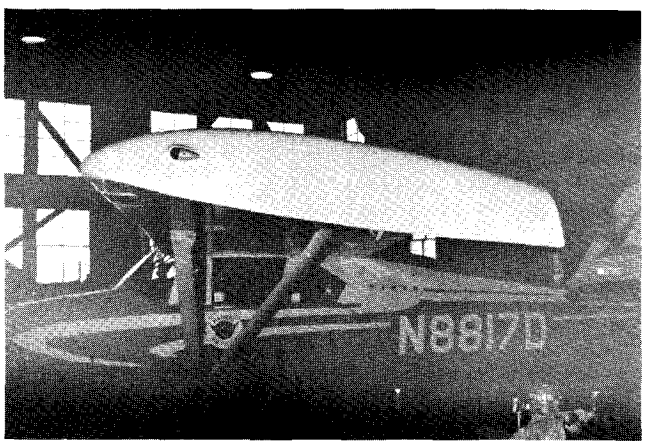
Fiberglass Super Tips
Aircraft: Piper

Dated 1-22-70
Model 104

Install 104-7 leading edge with #4 sheet metal screws. Route nav. light wire out thru lightener hole aft of front spar and temporarily tape to outside of rib.



Place Super Tip on wing, matching inboard edge with edge of rib. "C" clamp into place making sure nose is tight against rib. Drill 5/32" holes thru tip and rib flange at the following points. Measure these from the **TRAILING EDGE:** 5" 12" 19" 26" 34" 43" 51" and 57" along upper & lower surface.
Remove Super Tip and redrill mounting holes in rib flange to 3/16". Slide Tinnerman nuts into place over 3/16" holes.



Splice nav. light wire and fitting back onto wire coming thru new rib. Provide 12" of #16 wire for ground. Attach one end to rib.

Proceed with fabric covering and painting. Reinstall landing light frame and lens if applicable.
Install nav. light assembly in Super Tip. Hook up ground wire to light assembly. Hook up hot wire. Place Tip on wing and fasten down with #8 x ½" sheet metal screws.

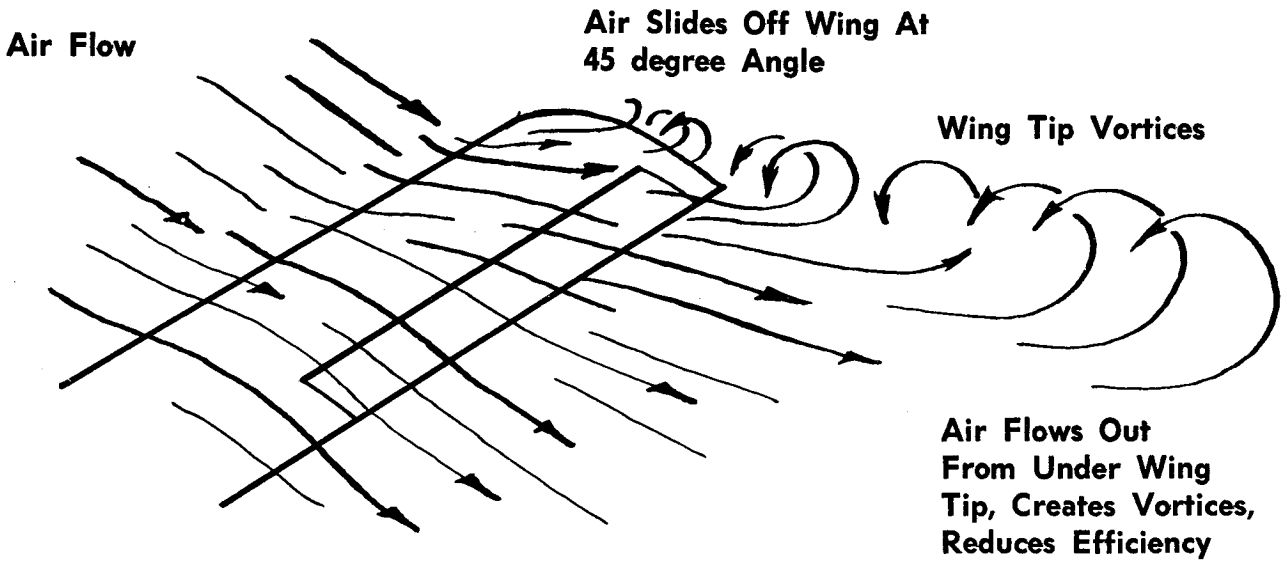
Record this modification in aircraft log and fill out FAA form 337.
Suggested statement for log entry and 337: "Installed Fiberglass 'Super Tips' in accordance with STC#_____ _____and manufacturers installation instruction, dated: 1-22-70."

Weight and balance information:	**Wt.**	**Arm**	**Moment**
"Super Tip" assemblies installed	21.5 lbs.	@33" =	709.5
Round tip assemblies removed . . . . . less	9.5 lbs.	@23" =	−218.5
Weight & Moment increase	12.0 lbs.		491.0

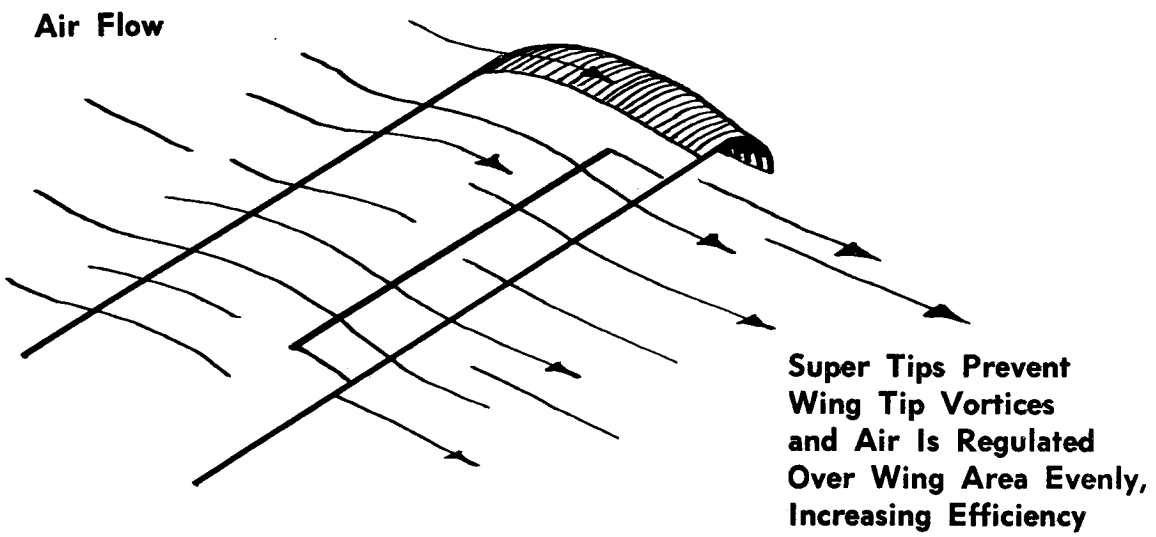
Note: The arm given is aft of wing leading edge.

How "SUPER TIPS" Improve Air Flow

AIR FLOW OVER STANDARD WING

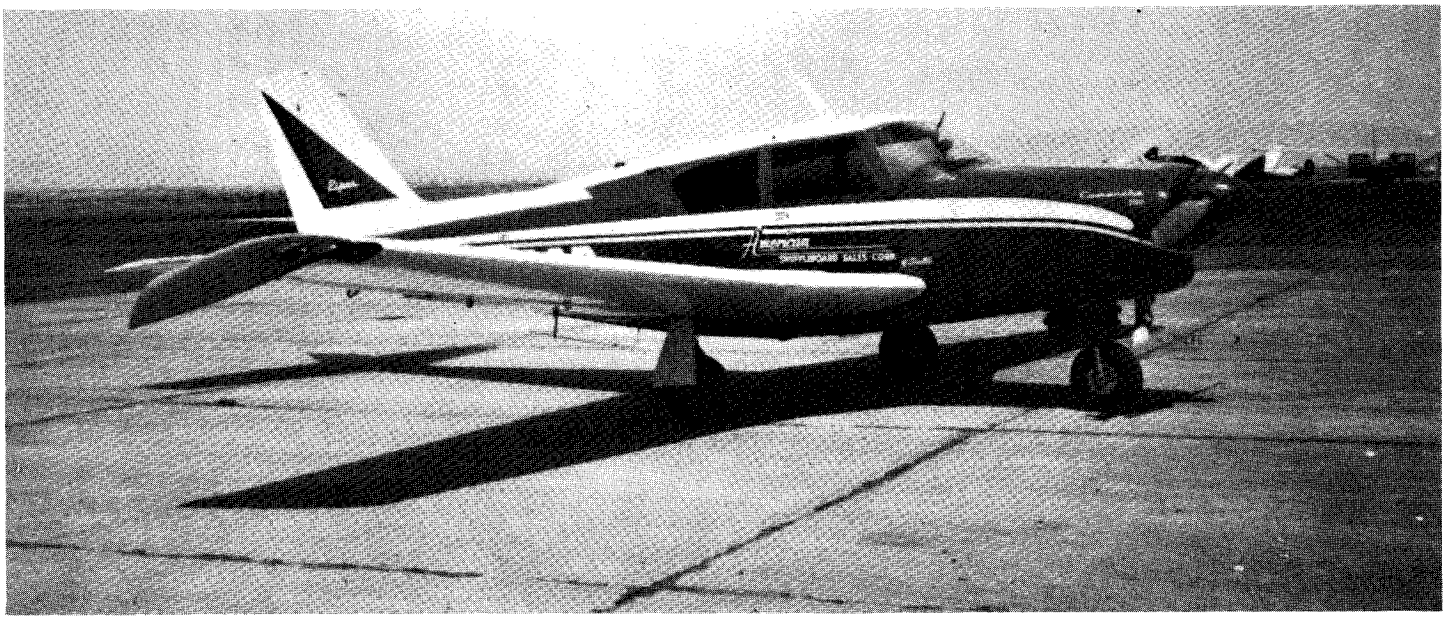


Air Flow With "SUPER TIPS" Installed



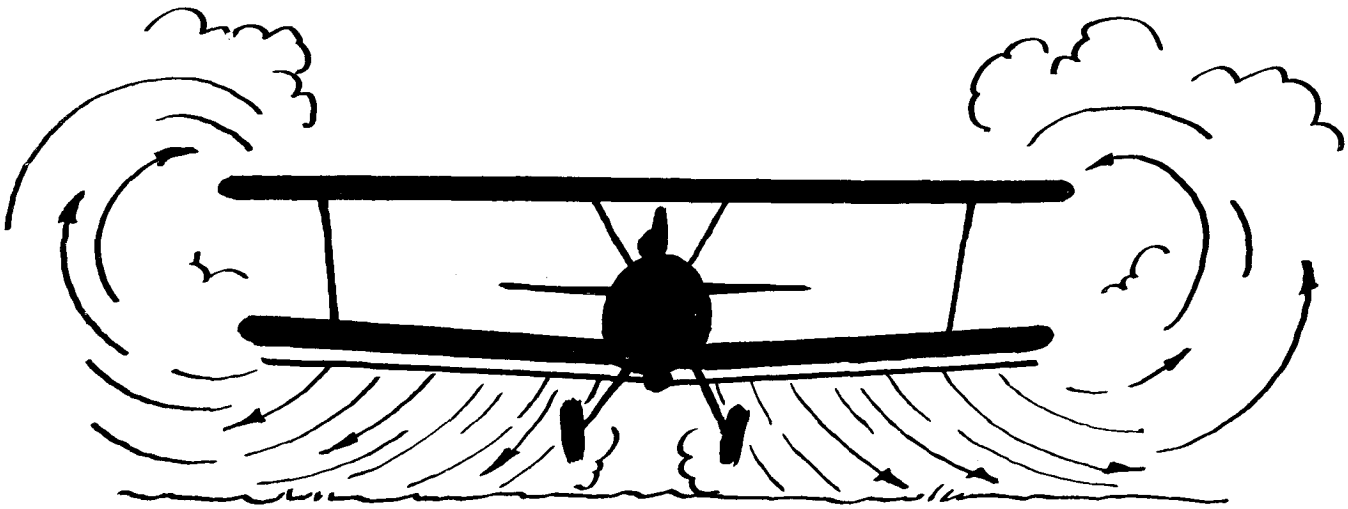

N1530C


N8833T



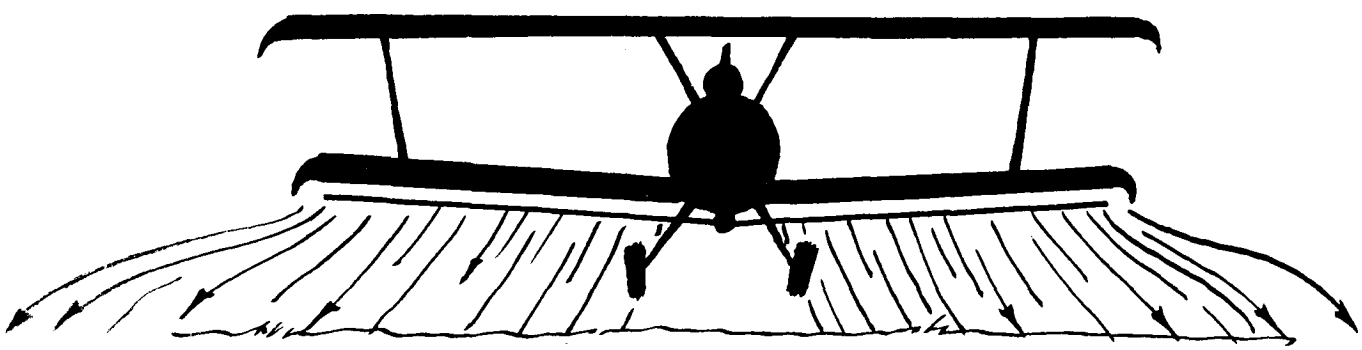
INCREASED SWATH FOR CROP DUSTERS

NORMAL SPRAY PATTERN

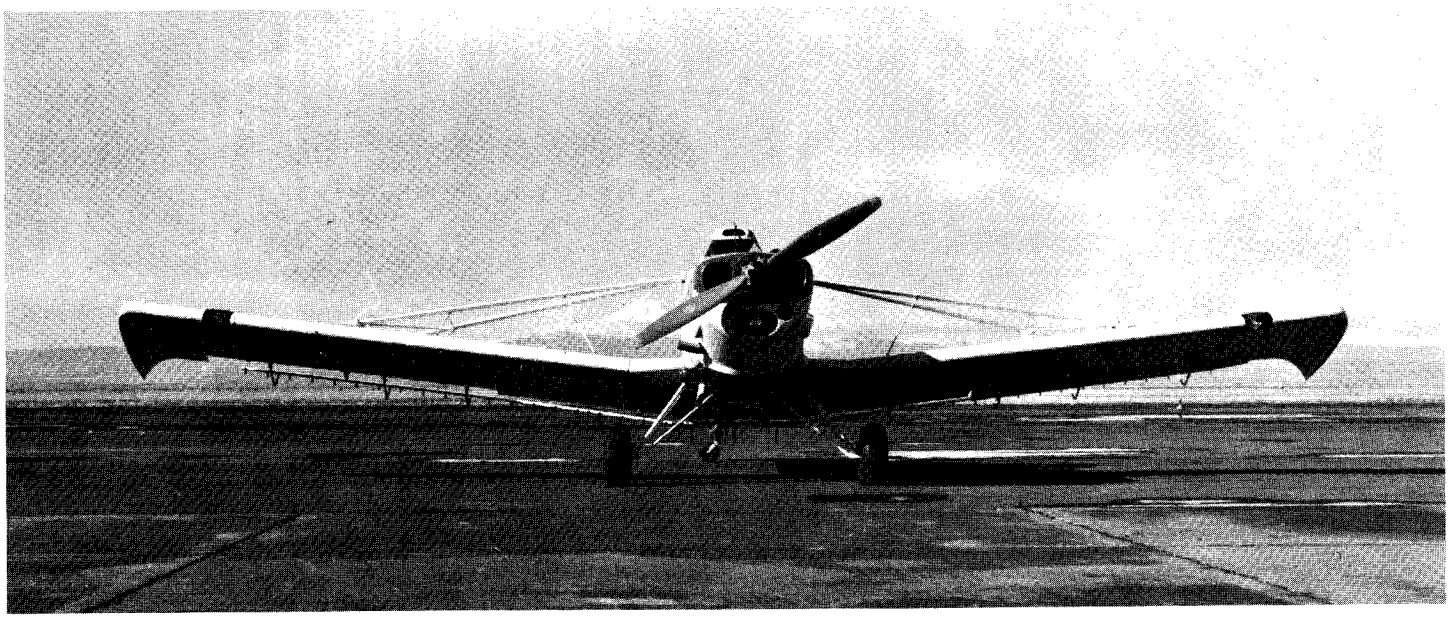


Swath 50 ft. Wide (Approx.)

Spray Pattern With "SUPER TIPS" Installed



Swath 100 ft. Wide (Approx.)



TO Madras Air Service
Madras, Oregon
Attention: Ace Demers

FROM
Butler AIRCRAFT CO.
P. O. BOX 338
REDMOND, OREGON 97756

SUBJECT:

DATE: 7-28-69

FOLD ↑

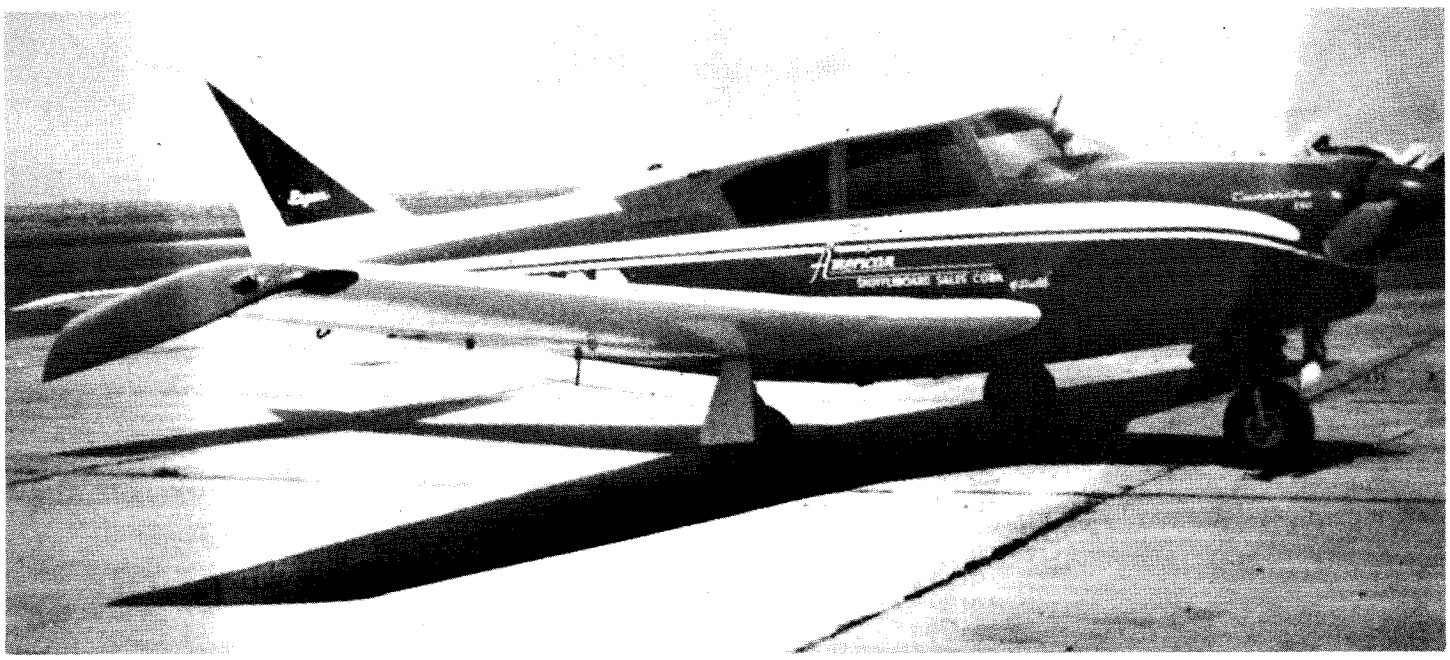
Dear Ace,

I test hopped the B-26 with the new wing tip installation. I am more than satisfied with performance. Aileron control has noticeably increased.

We have these approved on FAA 337's for one airplane at a time under Part 8.

PLEASE REPLY TO ⟶ SIGNED J C Musgrove Chief Pilot

American Suffleboard Sales Corp.
3144 Elliott
Seattle, Washington



Dear Mr. Demers:

We have had the "Super Tips" on our Company plane, A Comanchee 250 now for these past three months, and we are well satisfied with them.

85% of the Airstrips we use are less than 2000 ft. The "Super Tips" permit us to use a slower approach of at least 10 miles per hour, allows us greater stability at the lower speeds, a speed at level cruising.

The Demers "Super Tips" have made our Airplane much more usable in our business.

Sincerely yours,

Bill Knedler

Bill Knedler, Sales Mgr.
American Shuffleboard Sales Corp.

I have flown "Super-Tip" equipped aircraft now for over two years now and am very much impressed with the added performance they have given us.

The Super-Tips on our Stearman type aircraft, as an example, have helped performance in these ways: decrease in take off roll, increase in rate of climb, faster cruise speed to and from fields, much shorter turning radius, slower stall speed, shorter landing roll.

In my opinion the Super Tips have greatly increased performance and made our aircraft safer to fly. Increasing our earnings by the addition of "Super-Tips."

James L. Demers

James L. Demers
Commercial Pilot 1352164
Certified Flight Instructor

Ted's Flying Service
STAR ROUTE BOX 5
WINNEMUCCA, NEVADA 89445

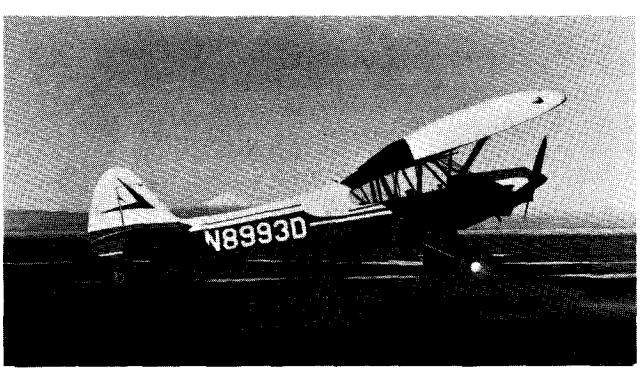
Feb. 21, 1970

Demers Super Tips
Madras Air Service
Route 2, Box 1225
Madras, Oregon 97741

Dear Ace:
Now that I have this plane back here in it's home country I am better able to see what these Demers Super Tips do for it. The more I fly it the better I like it.

Feb. 19, the day after I got home, I gave Ron Brown a demonstration flight, showing him what the Demers Super Tips did for my PA-18. Mr. Brown lives in Burns Oregon. He is the office manager for the Harney Electric Coop. He has a Piper PA-12 with a 125 Lyc. He said he wants to have you install a set of these wing tips on his plane.
His plane is due for an annual inspection in March. So I suggested he just fly it over to your field & you can install the wing tips while you are giving it the inspection. So you will be hearing from him soon.

Yours truly,
Ted Barber
Ted Barber



$.01 OREGON GASOLINE TAX INCLUDED

ELEVATION 4728'

$.04 FEDERAL GASOLINE TAX INCLUDED

80/87 - 100/130 FUEL
RUNWAY LIGHTS

BUSWELL FLYING SERVICE

Myron, Jeanne, Annette and Lisa Buswell

SERVICE CARS UNICOM 122-8 | BOX 691 | AIRPORT | LAKEVIEW, ORE. 97630 503-947-8240

5 April 70

To the Demers Family
Madras Air Service
Madras, Oregon 97741

Dear People,

Just think, if I had installed the "Super Tips" on my 260 Comanche 450 hours ago, they would have been paid for now with the increase in cruise speed. This is figured on a very conservative increase of 5 m.p.h. times 10¢ a mile airplane cost or 50¢ per hour saving.

The rate of climb has increased as per the brochure and the stability of the airplane, especially while on auto-pilot is much better.

And for a company plane, the "Tips" certainly have their value in advertising eye appeal.

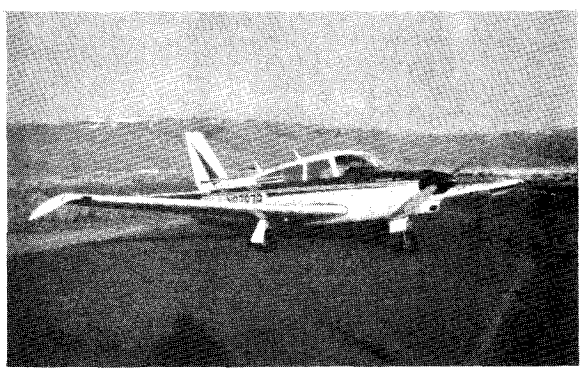
Keep up the good work and we'll be back soon for more of that fine Madras Airport hospitality.

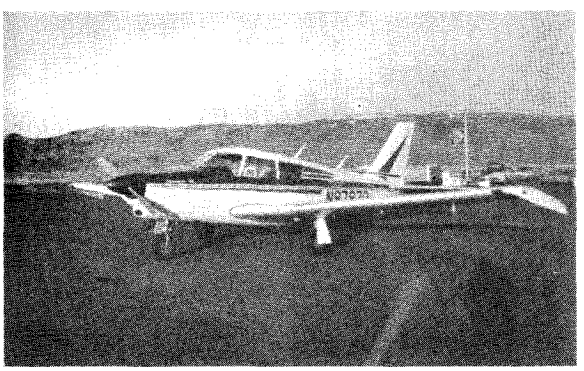
Sincerely,

Myron H. Buswell

Myron H. Buswell
Air Taxi and Stockplane Race Pilot
Airport Manager & Consultant

MHB/jb





PHONE CULVER 546-2241
AREA CODE 503

Gourmét FOOD PRODUCTS, INC.

POST OFFICE BOX 305 • METOLIUS, OREGON 97742

Dec. 23, 1969

Madras Air Service
Rt 2 Box 1225
Madras, Oregon 97741

Gentlemen

The purpose of my writing this letter is to let you know I am very happy with the "Super Tips" installed on the company plane, a Beechcraft Bonanza.

The performance has been increased considerably; that is, faster cruise, slower stall speed and landing distance reduced. The aileron control is much better. The most significant improvement is the reduction of the hunting or "fish Tailing" .

All things considered, this is one fine modification.

Sincerely

Richard M Lindley

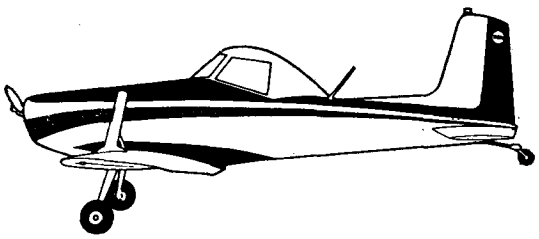
Richard M Lindley

Speaking as a pilot, the "Super-Tips" are the greatest improvement to the handling and performance of any airplane I have flown with them installed. The flight characteristics are close to that of the S. T. O. L.

Speaking as a mechanic, I like the ease of installation and the increased safety factor, meaning less maintenance.

Leo J. Demers, Jr.
Commercial Pilot No. 1267144
A & P Mechanic No. 1339426

Lenhardt Airpark



- Cessna Agwagon Sales and Service
- Used Aircraft
- Agricultural Flying
- Charter Flying

Route 1, Box 77A HUBBARD, OREGON Phone 503-651-2187

July 15, 1969

Mr. "Ace" Demers
Madras Air Service
Madras, Oregon

Mr. Demers,

We have been using your new type wing tips on our Cessna Agwagons for several months now and several hundred hours of flying time, and I want you to know that, as far as we are concerned, they should be a standard item on this airplane.

The following are the very noticable improvements we have found.

1. Lower stall speed
2. Shorter take-off and landing rolls
3. Quicker turning
4. Increased width in dust pattern
5. Improved stability under all conditions (that solid, hands-off feel to the airplane)
6. Improved stall characteristics and recoveries

We have found, too, that these tips do not lower cruise speed.

Good luck on getting these exposed. We think they are a real safety item.

Sincerely yours,

Jack L. Lenhardt


N881


RESTRICTED


N6869G

"The Home of Super Tips"

ACE

Madras air service

1914 N. W. DEMERS DRIVE
MADRAS, OREGON 97741
PHONE 475-2360

- SPRAYING
- DUSTING
- SEEDING
- FERTILIZING
- INSECT CONTROL
- INSTRUCTION
- CHARTER, FREIGHT AND AMBULANCE SERVICE
- COMPLETE SHOP FACILITIES
- CALL FOR FREE ESTIMATE FOR FULL EXECUTIVE CONVERSION ON ANY TYPE LARGE AIRCRAFT

After being in the flying business 40 years, and flying all types of fixed wing aircraft, I sure can tell the difference when flying aircraft with our "Super Tips".

L. J. "Ace" Demers

L. J. "Ace" Demers
Commercial-Instrument 104301
Founder & Owner
Madras Air Service

CHEVRON AVIATION FUELS

Standard Oil of California Products