

# QUICKIE NEWSLETTER

No. 6

October 1979

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Pilot's Manual*	\$8.00
Quickie Construction Plans**	\$150.00

\*Add \$1.00 for Air Mail overseas (U.S. funds)

\*\*TO be used with Quickie Aircraft Kit. Also, purchasers of the plans are entitled to a \$150.00 discount on the purchase price of a Quickie Aircraft Kit. California residents should add 6% state sales tax.

Quickie Aircraft Corporation is located on the east end of the flight line at the Mojave Airport, Mojave, California, which is approximately 80 miles north of Los Angeles. You are welcome to come by to see N77Q, the Quickie prototype, to ask questions, or to bring in parts of your Quickie for inspection. The building number is 68.

We are normally open from 9 to 5 on Tuesday thru Saturday, but you should call first if you are coming from far away, since we occasionally must close the office to attend a flyin, conduct business, etc.

Tom or Gene will be available to answer general inquiries from 1:00 to 5:00 on Tuesday and Thursday, and from 9:00 to 5:00 on Saturday. We would prefer that builders call us with questions at these same times. All times are PST.

Weather permitting, each Saturday at 10:00 we will give a flight demonstration with the Quickie.

When writing to QAC, always send a stamped self-addressed envelope along if a reply is necessary.

## SUMMARY OF ACTIVITIES

As we go to the printers with this newsletter, 12 Quickies are flying, and another eight to ten are at the finishing stage.

The 1979 Oshkosh Flyin has been completed. We again flew N77Q there; a total of three Quickies were able to attend.

Final testing has been completed on the low-toxicity Safe-T-Pox epoxy system, and it is being phased into Quickie Kit production.

We will hold a Quickie Construction Seminar over the Thanksgiving

weekend again this year.

Testing on the Oman engine modification, continues.

Additional inventory has been acquired and most backorders have been filled.

#### TWELVE QUICKIES FLYING

Quickie fever has caught on; there are currently 12 Quickies flying, plus another eight to ten that are finishing and painting.

In the next newsletter, we plan to list the names of all Quickie builders who have reported first flights.

Doug Swanningson's aircraft is one of those to make first flight recently. Instead of making the first hop himself, Doug called on Steve Wittman, a veteran pilot and one of the early supporters of the homebuilt aircraft movement. After flying Doug's Quickie, Steve had the following remarks, "I flew it a half-hour and took it up to 3,000 feet and it performed real well. For a plane of its type, it performed damn well." A local newspaper reported on Steve's first attempt at a stall, "Wittman stalled the wing at 3,000 feet and the plane oscillated back and forth, just like the manufacturer said it would. 'The nose dips a little,' says Wittman, 'but it doesn't go into a spin and it pulls into a glide again. Its a nice little airplane."

The Builder Tips section this month includes suggestions resulting from the early flights of these homebuilt Quickies.

#### QUICKIE CONSTRUCTION SEMINARS

Again this year, we are going to have a Quickie Construction Seminar at Mojave over the Thanksgiving weekend. The date will be 24 November, 1979. A flight demonstration will be given at 10:00. Lunch will follow, and the construction seminar will run from 12:00 to 5:00. The seminar will be a joint venture with Rutan Aircraft Factory.

The purpose of this seminar is to educate builders and potential builders in the skills and techniques used in sandwich composite aircraft construction such as the Quickie and VariEze. Although anyone interested is encouraged to attend, builders will be given preference for the seats in the front half of the room.

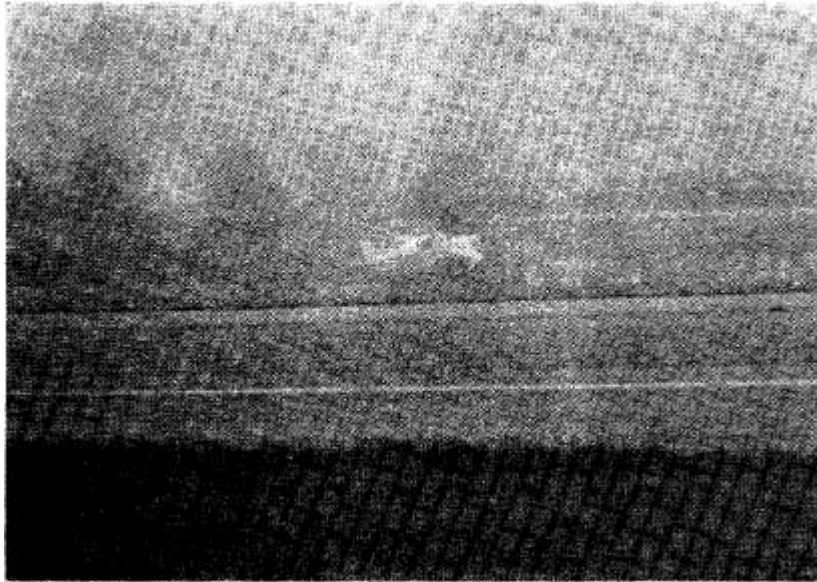
Last year over 300 people attended. This year, we are asking that you phone or write if you plan to attend. Please include the number in your party. It would also help if you would bring your own chairs.

For lunch, we will try to arrange with the airport cafe for service.

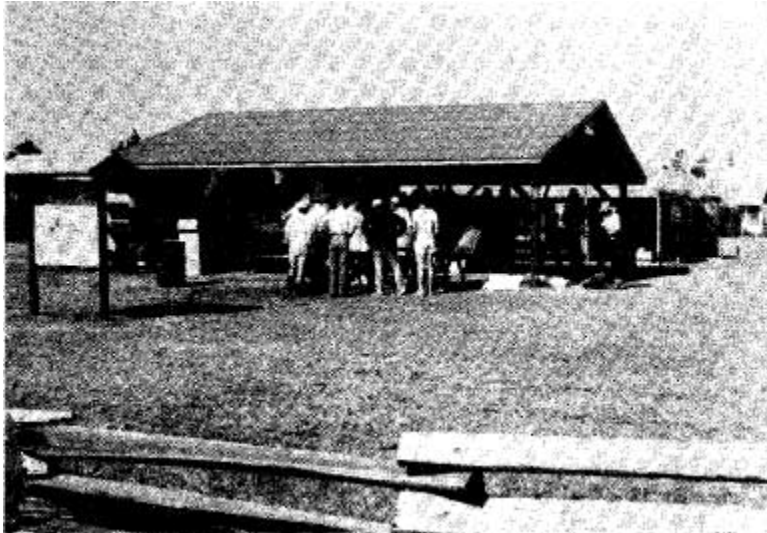
We will prepare a list of motels in the area for those of you are traveling far. Contact QAC for the list.

We do not expect time to permit us to give a series of seminars in 1980 such as we did in the summer of 1979. Therefore, we encourage all interested parties to attend if practical.

Also, for any of you who would like to pick up your Quickie Kits at the seminar, we must have the receipt of the order no later than 12 November.



Robert McFarland lifts off for the first time in his Quickie on 1 September, 1979



This is the Quickie Workshop at Oshkosh at 7:00 in the morning; normally, attendance ran 100-150 people throughout the day.

## **QUICKIE NEWSLETTER - No. 6 - page 2**

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### **OSHKOSH 1979**

We once again flew N77Q to the Experimental Aircraft Association's Oshkosh, Wisconsin flyin. Besides ourselves, two other Quickie pilots brought their aircraft to Oshkosh: Garry LeGare from British Columbia, Canada, and Delbert Whitehead from Indiana.

Delbert flew his Quickie non-stop from his home to Oshkosh, a distance of over 330 miles in less than 3 hours.

We had the opportunity several times during the week to demonstrate 77Q before the crowd. On Tuesday, Garry and Gene performed a dual demonstration flight. It was apparent to all that Gary's Quickie had superior performance to 77Q. Garry had previously accomplished an airspeed calibration and many speed points. From this data, we have established that his sea level maximum speed is 137 m.p.h. Later, he told us that he had measured his takeoff distance in Canada and found the following: at 5,700 foot density altitude and 467 lb gross weight, the average distance for three takeoff runs was 767 feet. This is over 400 feet less than the Quickie Pilot's Manual data indicates.

Garry also disclosed that he had turned down an offer of \$12,000 for his aircraft

Our trip to Oshkosh with N77Q was waded interesting this year by a persistent fuel contamination problem that mysteriously appeared at Tucumcari, New Mexico. The previous day we had flown Mojave to Winslow and Winslow to Tucumcari, a distance of almost 900 miles.

The contamination plagued us for most of the rest of the trip to Oshkosh. It had us pulling our hair out by the time we arrived in Wisconsin. Hindsight being always 20-20, it is easy now to look back and determine what we should have done differently.

The contamination is believed to be due to a bad batch of fuel at Winslow. The fuel filter, which had over 400 hours on it, was allowing contaminants to pass through it unfiltered into the carburetor. The result was an intermittent engine sagging. Since the filter remained 'clean' during inspection, and since no dirt could be found in the fuel system (the particles would eventually pass through the carburetor, into the engine, and then out the exhaust), the intermittent problem had us baffled.

We finally located the culprit when we found a particle on the needle valve in the carburetor. Once we changed filters, and flushed the system out, we had no further problems for the remainder of the week at Oshkosh and for the return trip to Mojave.

The moral is to replace fuel filters every 200 hours whether they need it or not! It should be noted that the contamination problem did not precipitate any emergency landings even though the engine sagged 100 to 200 r.p.m.; it just caused much head scratching and looking.

The trip home was not without drama either. There were thunderstorms in Wisconsin, fog in Iowa, and headwinds of 40-60 knots from Kansas City to Albuquerque. The trip included a 7,500 foot density altitude takeoff from Truth or Consequences, New Mexico.

Looking back at Oshkosh nearly two months later, we feel justifiably proud of the accomplishments: in less than a year, seven Quickies were built and flown successfully, one with over 84 hours on it; the builders are seeing better performance than our pilot's manual indicates; and they like their Quickies.

### **SAFE-T-POX AVAILABLE**

Final testing on the low toxicity Safe-T-Pox epoxy system has been completed, and it is being phased into the Quickie Kit production.

We have yet to find even one person who could not use this epoxy. This sampling included many individuals who are sensitized to ordinary epoxy systems; in all cases, they have been able to use Safe-T-Pox with no problems. This has already resulted in several aircraft sales.

We are confident that Safe-T-Pox represents a significant breakthrough in epoxy systems, and that its use in the Quickie Aircraft Kit will essentially eliminate epoxy sensitivity problems during construction.

Existing Quickie builders may, of course, purchase Safe-T-Pox if needed.

Information on the use of Safe-T-Pox is included with the epoxy but a few comments are in order. First, the mix ratio by weight is 100 to 43. Therefore, the scale shown on page 3-2 of the Quickie Construction Plans will have to be modified (see Builder Tips). Second, the 3-M Glass Bubbles must be used instead of the ordinary Q-Cel Quartz Microspheres. Third, the properties of Safe-T-Pox are such that it can replace both the fast and the slow RAP epoxy. Therefore, only one hardener is used.

### **SALES AND DELIVERIES**

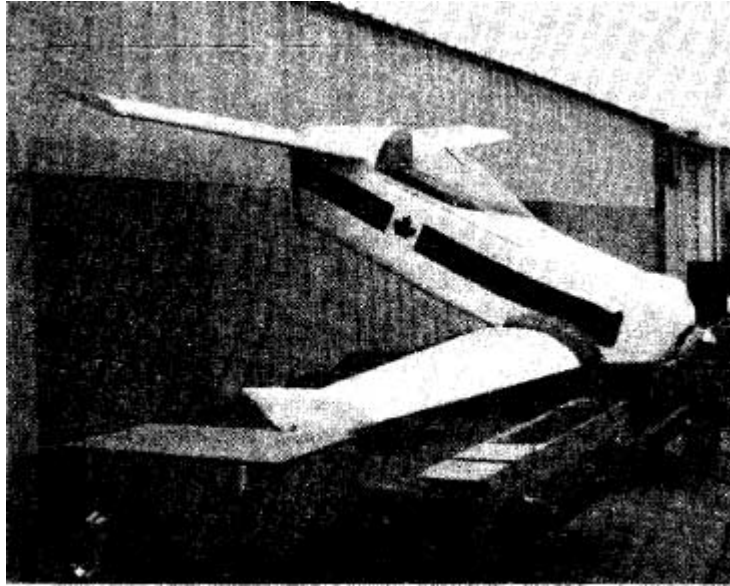
Quickie sales are currently over the 300 mark. Delivery is running 4-5 weeks from the receipt of the order.

QAC has been working hard over the last few months to complete all backorders for existing sales.

Some of the items that had been in short supply include tires, seatbelts, altimeters, engine instruments, prop extensions, and miscellaneous hardware. Some of these components are specially produced for QAC in quantities of 100-200 units at a time. The delays by the manufacturers in delivering these batches has caused the shortages. Current delivery schedules call for most of these items to be in-house during October. Once received by us, we will expedite shipment to the customer.

QAC has a large inventory of most of the prefabricated components.

We currently have about 35 engines in stock. We have been advised that Onan has effected a significant price increase throughout their engine line. Therefore, those of you who have been holding off purchasing a Quickie engine should consider buying one while we still have them in stock at the old price. The increase in price when the current engine supply is exhausted is likely to be in the neighborhood of \$100.



Garry LeGare's Quickie on the trailer

#### **QUICKIE GRASS AIRPORT PERFORMANCE**

One of the most frequent questions we hear at QAC concerns the capability of the Quickie to be operated on grass airstrips.

We have operated N77Q from grass several times with no particular problems. Gerry LeGare has had similar success with his Quickie. However, since most of the airfields in Canada are grass, he felt that improvement in that area would be welcome. Therefore, we have been working with him over the past two months on a wheel pant configuration that allows an increase in tire diameter of nearly 50% along with an improved set of brakes.

Just prior to closing date on this newsletter, Garry made first flight on the new wheel pants. He is enthusiastic over the improvement in both ground handling and takeoff & landing performance. He compares the big tire Quickie favorably to taildraggers like the Cessna 140, Fly-baby, Volksplane, and Pietenpol.

**continued on next page**

## **QUICKIE NEWSLETTER - No. 6 - page 3**

Takeoff distances at 450 lb weight and 1000 foot density altitude average 600 feet, and the landing rollout is even shorter.

Tom Jewett made a trip to Canada in August to coordinate the effort and to obtain a first hand look at the typical airport in Canada. He reports them to be similar to U.S. grass airports, except that some of the Canadian strips are 'clumpy'.

Don't write QAC or Garry for information. There is still some testing remaining. We plan to release a set of plans and parts list for the modified wheel pants sometime around Christmas. The modified pants are retrofittable to any Quickie - after all, Garry had to cut his old ones off to install the test ones!

Three other comments; Garry reports that the new wheel pants reduce his maximum speed by 2 m.p.h., he reports that even on grass, the revised brakes are strong enough to raise the tailwheel, and that the modified pants weigh only 5 lb more than the stock set.

### **QUICKIE RECORDS?**

We reported in the July issue of this newsletter that we had petitioned the National Aeronautics Association (NAA) for setting up a new international weight class for records of 0 - 550 lb gross weight.

We learned last month that the NAA has Set up a national 550 lb class. Since it may take 1 to 2 years for the international 550 lb record class to be approved, we are going to concentrate on the national class.

### **THE FUTURE OF N77Q**

At Oshkosh this year, the Experimental Aircraft Association (EAA) asked us to consider donating N77Q to the EAA for display at the museum. They indicated that they were working with the National Air and Space Museum in Washington D.C. trying to put together a display of homebuilts for the national museum, and that they would very much like 77Q for that honor.

As a result of that conversation, plus some thinking on our part, we have decided to build a second Quickie this winter. As our builders have discovered, there is a significant performance improvement possible with careful attention to details.

Another reason for building a second aircraft is that we are getting embarrassed by how much better the homebuilt Quickies perform compared to 77Q. On the other hand, 77Q is the prototype, and prototypes should never perform as well as the homebuilt versions, unless the manufacturer fudges the brochure data, which we did not do.

Our current thinking is that we will use 77Q for several record attempts in 1980 before donating it to the EAA, and then use our second Quickie for some further attempts late next summer.

## **QAC STAFF**

Julia Flores - Julia is our office manager. She is the person to call with questions about shipment dates and backorders, as well as for general information.

Gary Morris - Gary is our shop supervisor. He has over 8 years experience with sandwich composite Structures.

David Hosh - David recently joined QAC after working at the Edwards Air Force Base Flight Test Center. More than likely, when he is not in the shop building things, he is packing boxes for Quickie Kits.

Gene Sheehan & Tom Jewett - These two guys handle homebuilder support, design, development, and anything else that needs to get done.

In the next newsletter we promise to show you some pictures of this motley crew, so that at least you know who it is your talking to on the other end of the phone. Also, on the first page, please note the days and times dedicated for builder support; it might save you calling when Tom and Gene are out of the office.

## **ENGINE MODIFICATIONS**

Testing continues on the 'bolt-on' modifications to the Onan engine mentioned in the April, 1979 Quickie Newsletter. Our goal is 23 h.p.

Over 200 hours of testing has been completed on the modified cylinder heads, and we are close to a production decision on those. Although several different carburetors have been tried, none thus far has given us the increment in performance necessary to warrant a change from the stock system. The tuned exhaust has been made, but not tested on the aircraft yet.

The Kevlar engine mount has been on N77Q for about 125 hours and has proven to significantly reduce the already acceptable vibration level.

During October, we will be testing these modifications and others on a dyno. We do not expect decisions on availability and price until December.

Please don't call and ask for information; that only slows down our work. Also, we again emphasize that we are experimenting only with modifications that are adaptable to a stock Quickie Engine. We are not busy in the back room trying to obsolete the standard engine that you may have already bought, or are about to buy. Further, current thinking is that 20-25 hours of running will be recommended before installing any of the new pieces. Therefore, do not expect the kit to be a factory installed option; rather, the homebuilder can install it after he has carefully broken in his engine.

A couple of builders have decided to do their own mods to their engines. We wish them well, but cannot, of course, support them if they run into problems. As an example of what we're talking about, consider the following: at least one builder has 'ported' his engine. As any serious engine builder will testify, proper porting requires a



flow bench to determine what is going on inside the engine. We have determined that some normal porting techniques actually reduce the Onan's horsepower: As a second example, the revised cylinder heads require a careful torque schedule and gasket sealant to prevent loss of power and hard starting characteristics.

### **COMPOSITE MATERIALS INTRODUCTORY KIT**

CAN I BUILD A COMPOSITE AIRCRAFT?  
WILL I ENJOY WORKING WITH GLASS & FOAM?  
IS MY WORKMANSHIP ADEQUATE TO BUILD A QUICKIE?  
WHAT ARE THE TECHNIQUES USED IN THE QUICKIE CONSTRUCTION?

There is now available an introductory kit to answer these questions for you. The kit consists of a book and sample materials, or the book can be purchased separately. The book, "Moldless Composite Sandwich Homebuilt Aircraft Construction", consists of 26, 11x17 pages (equal to 52 pages) describing how the material is applied, education on the materials, tools required, inspection and repair methods. Sample materials include: epoxy, microspheres, f lox, peel ply, wire for hotwire saw, etc.

The book is \$14.50, and is available free us.

The kit (book and materials) is \$45.50 and is also available from us. California residents please add 6% sales tax.

### **QUICKIE CONSTRUCTION PLANS**

At the 1978 Oshkosh, Wisconsin flyin, we had several sets of Quickie Construction Plans available for visitors to examine. In addition, individuals are welcome to visit our Mojave, California facility and study the plans there.

However, many visitors at Oshkosh wanted the opportunity to examine the Quickie Construction Plans at length in the privacy of their own homes. This is understandable and we have decided upon the following arrangement to facilitate this: The Quickie Construction Plans are available for \$150. Purchasers of the plans will be entitled to a \$150, discount on the purchase price of the Quickie Aircraft Kit.

**continued on next page**

## **QUICKIE NEWSLETTER - No. 6 - page 4**

These plans are identical to what an individual would use to build a Quickie from our Quickie Aircraft Kit.

<u>Chapt</u>	<u>Title</u>	<u>Pages</u>
1	Description/Introduction	4
2	Bill of Materials/Sources	1
3	Composite Materials Education	23
4	Miscellaneous Parts	7
5	Hot Wiring	4
6	Ailerons and Elevators	2
7	Building the Fuselage	14
8	Vertical Fin and Rudder	5
9	Building the Main Wing	14
10	Building the Canard	13
11	Wheel Pants/Wheels/Brakes	9
12	Fuel System	3
13	Mounting the Wing and Canard	3
14	Fuselage Details	6
15	Canopy	8
16	Instruments and Pitot-Static	1
17	Engine Installation	2*
18	Electrical System	1
19	Finishing/Painting Large	7
Appen.	Large Drawings	6

\* The remaining pages of the Engine Installation section are included only with the Quickie Engine Package.

Quickie Aircraft Corporation supports individuals building Quickies from our kits.

California residents buying the plans should add 6% state sales tax.

### **RUMOR SQUELCHING DEPARTMENT**

This department will be an irregular feature of the Quickie Newsletter. It's purpose is to correct misinformation that may be circulating about the Quickie.

- #1 "The ignition coil must be mounted vertically or the engine will stop"

Nonsense: Onan has been building engines for 20 years with the same coil we use mounted horizontally. Ask any Onan user how long they keep running.

- #2 "The Quickie cannot be flown in the rain"

Rain has an effect on any aircraft, and the Quickie is no exception. On a Grumman Tiger, for example, trim the aircraft for cruise at 10,000 feet straight and level. Next, enter very light precipitation; the nose will drop and the descent rate will be 250 ft/mn if you do not retrim. If the precipitation increases in intensity, the descent rate will increase to 500 ft/mn if you do not retrim. Retrimming to level flight results in a loss of about 2 m.p.h. in airspeed.

In the case of the Quickie, the "initial Flight Testing Guide of Your Quickie" states, 'Moisture on the canard causes an increase in the stick forces that the pilot feels, according to testing that we have done with N77Q. This change in force required might be disconcerting to a low time Quickie pilot (the increased force required for a given airspeed will tend to drop the nose until the pilot corrects by increasing the force on the stick (and retrimming). Testing on N77Q has shown no change in the minimum speed, but a large increase in force required.

Garry LeGare has both flown and landed his Quickie in the rain. He reports that two notches of trim are required to compensate for the rain, and that the aircraft flares well at 70 i.a.s. for landing.

- #3 "The Quickie is so finely balanced that grass on the canard will require almost full opposite aileron to correct"

Come on guys! That statement is ridiculous on its face, but we asked one of our builder's, Delbert Whitehead, who flew his Quickie to Oshkosh, and he replied, "I have used my Quickie as a lawn mower." In addition, both Garry LeGare and QAC have cut grass with Quickies without problems.

- #4 "The Quickie will not perform at high density altitudes"

All handbook performance data is accurate for N77Q. Our builders have, in general, seen better performance than N77Q. We have twice flown the aircraft to Oshkosh. These trips have included 7,500 foot density altitude takeoffs as well as routine cruise at 11,000 feet.

To give you an example of a typical rumor, at Oshkosh this year a gentleman came up to us and said, "I hear you had

some trouble at Albuquerque this year; I hear that you landed at Coronado and had to truck the aircraft to the International Airport to get it off the ground." We replied that we didn't land anywhere within 200 miles of Albuquerque this year!

#5 "Homebuilders won't be able to get engines"

Every Quickie builder who has paid for an engine has received one. In addition, we currently have over 30 engines in stock, Finally, Onan sells over 10,000 of these engines per year, so you are likely to trip over one anywhere.

#6 "I know of this super engine that you guys ought to use"

Every time that someone comes to us with an alternative engine proposal , we examine it carefully. We look at reliability, quality, service history, horsepower, weight, potential modifications required, price, and availability. The latter is very important, To date, we have seen no better choice than the Onan. Again, beware of engines 'measured at the spec sheet'.

#7 "After a while, the epoxy in the fuel tank will decompose, contaminate the fuel, and stop the engine"

There has been one incident of a VariEze suffering engine stoppage due to contamination possibly due to a breakdown of the epoxy. The pilot had been using auto-fuel.

Exhaustive testing reveals that a properly mixed batch of resin and hardener will not break down after curing. Some of the samples go back over 4 years.

A survey of VariEze and Quickie builders has failed to turn up other examples of failures.

Although testing continues, it is suspected that the high aromatic. in auto gas may be a contributing factor.

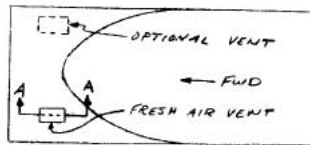
#8 "I've super-tuned by Quickie engine and have 21 h.p."

Every Quickie flying uses one of our engines. The engines we deliver have 18 h.p. There is no magic in the world; more horsepower requires time, money, knowledge, trial and error, and an accurate dyno. Expect to invest lots of money; ask Onan. Modification without adequate testing may lead to a lose in engine reliability. Beware of horsepower 'measured at the brochure'.

## **QUICKIE NEWSLETTER - No. 6 - page 5**

### BUILDER TIPS

1. Canard Surface Waviness - Come on guys! Chapter 19 details the finishing process for your Quickie. Pay attention to page 19-7 on surface waviness of the canard. Do not fly your aircraft until completing all of the work in Chapter 19. If you don't finish the canard to at least 0.005" waviness in the areas indicated, you will be very disappointed in the aircraft's performance. We thought that the personal example we gave from the flight test program would discourage anyone from trying it, but at least one and perhaps two builders have ignored the plans and flown anyway. The results? Some hurried phone calls to QAC for help and a couple of demonstrations on how tough the Quickie is.
2. Ultraviolet Protection - Come on guys! Don't fly your Quickie without priming and painting the surfaces. That ultraviolet protection you obtain from the primer, and the temperature control that you obtain from the paint is important. One more time! Complete Chapter 19 before you fly your aircraft.
3. Exhaust Pipe Gaskets - For those of you whose engines did not come with gaskets to place under the exhaust pipe flanges, you may use the asbestos in the Engine Installation Package to make them. Three layers of asbestos for each gasket is OK.
4. Tailwheel to Rudder Cables - These two lengths should be swaged with no weight on the tailwheel. Since usage may allow these cables to stretch slightly, Garry LeGare suggests hooking them together with a simple spring about half-way between the rudder and tailwheel. The spring will keep the two cables taut. Don't overdo it.
5. Safe-T-Pox Balance - If you are using the Safe-T-Pox epoxy, the balance shown on page 3-2 of the Quickie Construction Plans must be modified as follows: the 3" arm length on the resin side must be increased to 5.9". This results in a 100 part resin to 43 part hardener ratio (by weight).
6. Cockpit Fresh Air Vent - Below is a sketch of a simple vent. The optional location for a second one is for very hot climates. Use a rag or foam to close it off in the winter.

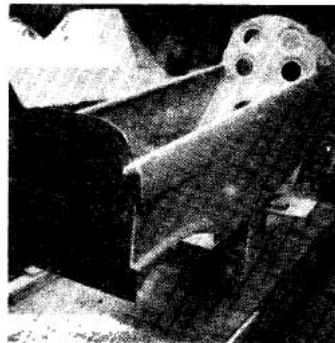


CANOPY (TOP VIEW)



SECTION A-A

7. Antenna System - We are working with Aircraft Spruce on a complete Quickie antenna system. This package would include antennas, cable, and all fittings. You can expect about 1 December availability direct from Aircraft Spruce.



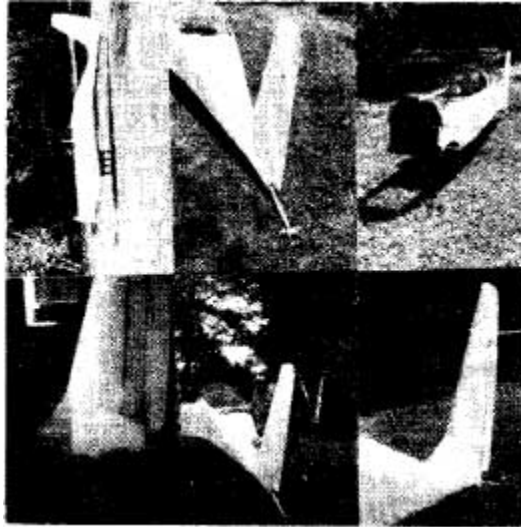
George Edward's Quickie fuselage ready for glassing; Note the nice foam contouring.



Al Thompson glassing the bottom fuselage on the inside; note the squeegee action.

QUICKIE CONSTRUCTION PLANS CHANGE NOTICE

<u>NUMBER</u>	<u>DESCRIPTION</u>	<u>DATE</u>
QPC 31	Page 17-2; The AN4-22A bolts (3) have been changed to AN5-22A bolts. All builders have been sent the new hardware at no charge. The builder will be required to drill out the ES5 spacers for the larger diameter bolts. This change is MANDATORY and must be completed before any further flying. Also note QPC 30	20 July, 1979



A composite picture of Owen Billman's Quickie

## QUICKIE NEWSLETTER - No. 6 - page 6

# QUICKIE



P. O. BOX 786      BUILDING 68  
MOJAVE, CA 93501      MOJAVE AIRPORT  
805-824-4313

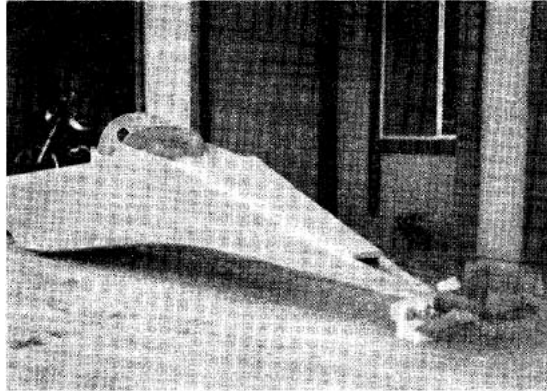


Bob Pate's Quickie almost ready to fly; a beautiful looking paint job.



THE QUICKIE WILL VISIT.....

1. The Ramona EM Flyin, 27-28 October, Ramona, CA
2. The Do It Yourself & Kit Show, 29 Nov. thru 2 Dec., Baltimore Convention Center, Baltimore, MD



Some guys just can't resist putting the tail on the wrong end of an aircraft. Actually, we think that Victor Turner is trying to save on construction time by installing pieces from other projects.

DID YOU KNOW DEPARTMENT

1. The "cheapest" Lycoming aircraft engine you can buy costs \$6,500 new!
2. Inventories of Cessna and Piper trainers have been building up rapidly. Maybe people are finally beginning to balk at a \$25,000 110 m.p.h. aircraft with a \$6,500 engine.

**Back Cover**

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