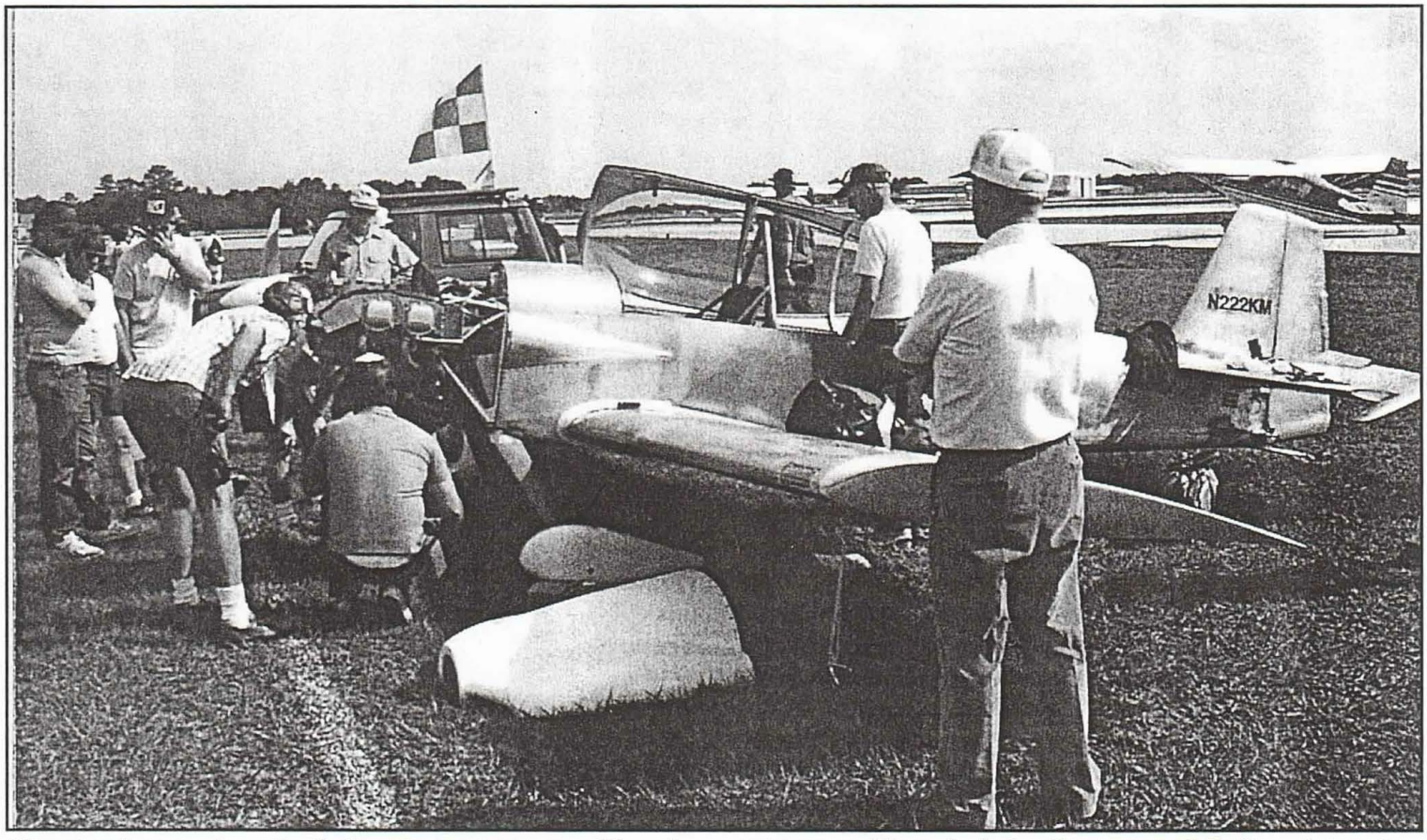
Builders Never Had It So Good

BY TONY BINGELIS



Attend and support nearby fly-ins whenever you can. There is much to see and learn by being there, especially if you take a few detailed photos of the type of aircraft you are building.

Building an airplane is a long term commitment in time and money, and yet thousands of first-time builders have managed to persevere and are now flying some mighty nice homebuilts.

How do they do it? Are they highly experienced engineers, mechanics, electronics gurus, and rocket scientists? Obviously, most are not.

Most serious builders are, however, highly motivated and determined individuals from all walks of life who are intrigued with the idea of building and flying their own airplane. Instinctively, they feel it doesn't take a mechanical genius, a highly skilled aeronautical engineer, or someone with a broad technical background to build an airplane. And rightly so.

As evidence, I offer the following abbreviated cross section of successful builders in my area. It includes a dentist, a plumber, several retired military pilots, a veterinarian, a number of computer employees and analysts, a chiropractor, an airline captain, an insurance salesman, a rancher, a contractor, a cabinet shop owner, a fire chief, a machine shop owner, a boat builder, a couple of flight instructors, a tech school instructor, and even a neurosurgeon who built a Pietenpol.

Obviously, these very busy individuals really wanted to build an airplane . . . and were willing to find the time to do so. Except for a few of these individuals, some didn't even have a two-car garage or a workshop area when they first started. Significantly, all were EAA members and were confident they would not have to singlehandedly fabricate all the components and parts for their projects behind closed doors in their own private "skunk works." Not when all kinds of help, guidance and resources were theirs — just for the asking.

O.K., so you don't want to ask for help. Well, you don't have to. There are folks (call them EAAers, homebuilders, aviation crusaders or whatever) who seem to share unique characteristics . . . they love to see others start their very own homebuilt projects and want to see them succeed . . . often so much so that they just can't help exuding optimistic encouragement.

So, if you are an aspiring builder but have some qualms about your ability or think you lack the time to successfully complete your dream airplane . . . read on.

FIRST THINGS FIRST

Study your plans and builders manual! Much more information is contained in the plans and builders construction manual than many a first-time builder would expect to learn.

You cannot find everything you want and need to know by casually glancing through the plans and instructions as you would a newspaper. Sometimes a detail may not be where you expect it to be.

Study your plans continuously during construction and you will eliminate a lot of unnecessary frustrations and telephone calls.

There are a number of other concurrent initiatives you can take that will help you develop your homebuilder skills and confidence.

One of the more important of these is to arrange to visit any nearby builders who may already be building or flying the same kind of airplane as the one you selected. If nobody has a similar project underway in your vicinity, try to establish contact with a few local homebuilders regardless of the type of aircraft they are building. You can learn a lot by visiting other projects. Don't worry about conversation. Conversation comes naturally when people of like interests get together.

WE NEVER HAD IT SO GOOD . . .

During the early years of homebuilding, a builder had to pretty much go it alone. There were no practical technical books or manuals that could be used . . . except for old military technical orders and manuals written for big military aircraft. There were no kits as we know them today and only a few (very few) designs were available to builders.

The so-called Fly Market or Country Store can be a homebuilder's treasure house where all kinds of hard-to-find parts often show up.

The plans were skimpy and lacked details for instrumentation, engine installation, propeller selection, and even for electrical and control systems.

As for designer furnished building instructions, they were as skimpy as the plans.

It was a rare sight to see a homebuilt on the airport or, for that matter, to see one under construction anywhere. This made it difficult for a first-time builder to visualize what homebuilts really look like.

How different it is today. There are thousands of homebuilts flying and they are a common sight on most any airport. And that's not all. Here is what else you have going for you today:

1. **The EAA — your best technical resource.** I can't imagine anyone wanting to build an airplane without joining the EAA. This organization, the largest of its kind in the world, was specifically started for folks who were interested in building and flying their own sportplanes.

The membership magazine you are now reading, ***Sport Aviation***, is the finest, most detailed, aviation magazine in the world featuring everything you as a sport pilot and aspiring builder would be interested in.

For example, through the EAA you can use your credit card to order "how-to" books, manuals and videos (1-800/843-3612) and obtain library services for almost any technical subject you may want to research.

EAA designated highly experienced volunteers (Technical Counselors and Flight Advisors) will gladly help you to realize your goal of building and flying safely.

Join the EAA now if you are not already a member . . . don't be a loner.

And there is still more . . .

2. **The local EAA Chapters.** By joining a local EAA Chapter, you can take advantage of the services and individual guidance available from the Chapter's Technical Counselor or Flight Advisor. The monthly Chapter meetings are where you can meet other builders and mingle with interesting individuals with like interests in homebuilts and sport flying. These members, collectively, know the best sources of supply (reliable and not so reliable) for whatever aircraft parts, components, instruments, avionics, and construction materials you may need.

I don't know what kind of aviation related know-how you may have, but in the typical EAA Chapter there is an amazing amount of diversified expertise. In a larger Chapter, you are quite apt to find information, guidance, and advice from highly skilled engine specialists, avionics gurus, machinists, dope and fabric experts, welders, wood craftsmen and maybe a "guard house lawyer" or two . . . most anything a builder might need.

Jigs, wing racks, engine stands are often passed from one builder to another . . . often free for the hauling.

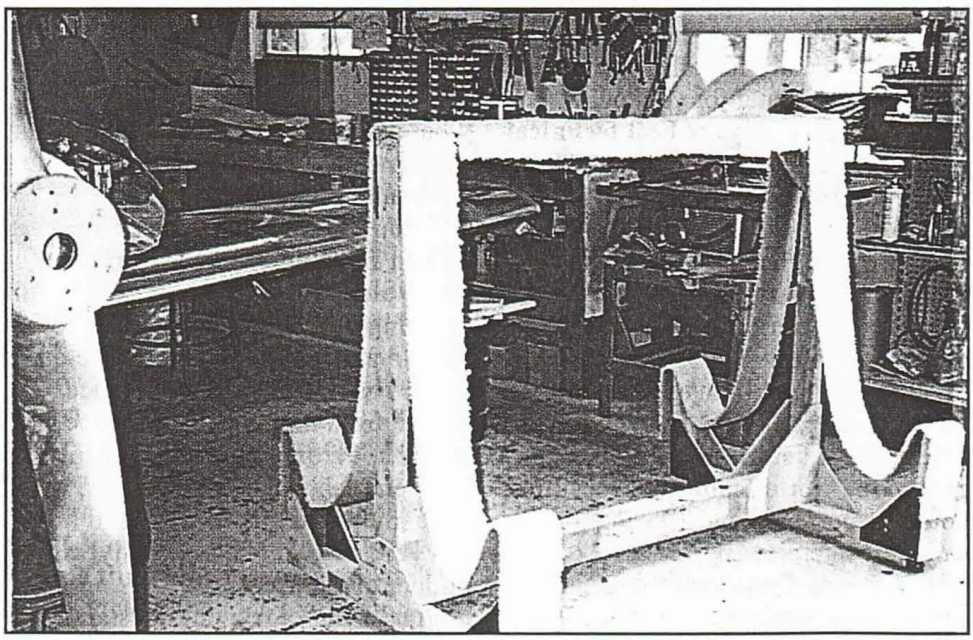
Here a few experienced local EAAers are helping a fellow builder rivet his metal wing spar.

Think of the time and money saved by not having to build your own.

The Chapter may have weighing scales and can help you with your aircraft weighing.

Certainly, there always seems to be plenty of willing manpower to give you a hand with the weighing, moving and even the assembly of your aircraft.

3. **And then there is the FAA.** We have a FAA that is very helpful in providing detailed guidance for builders who want to have their aircraft registered, inspected and certificated in the Experimental Category.

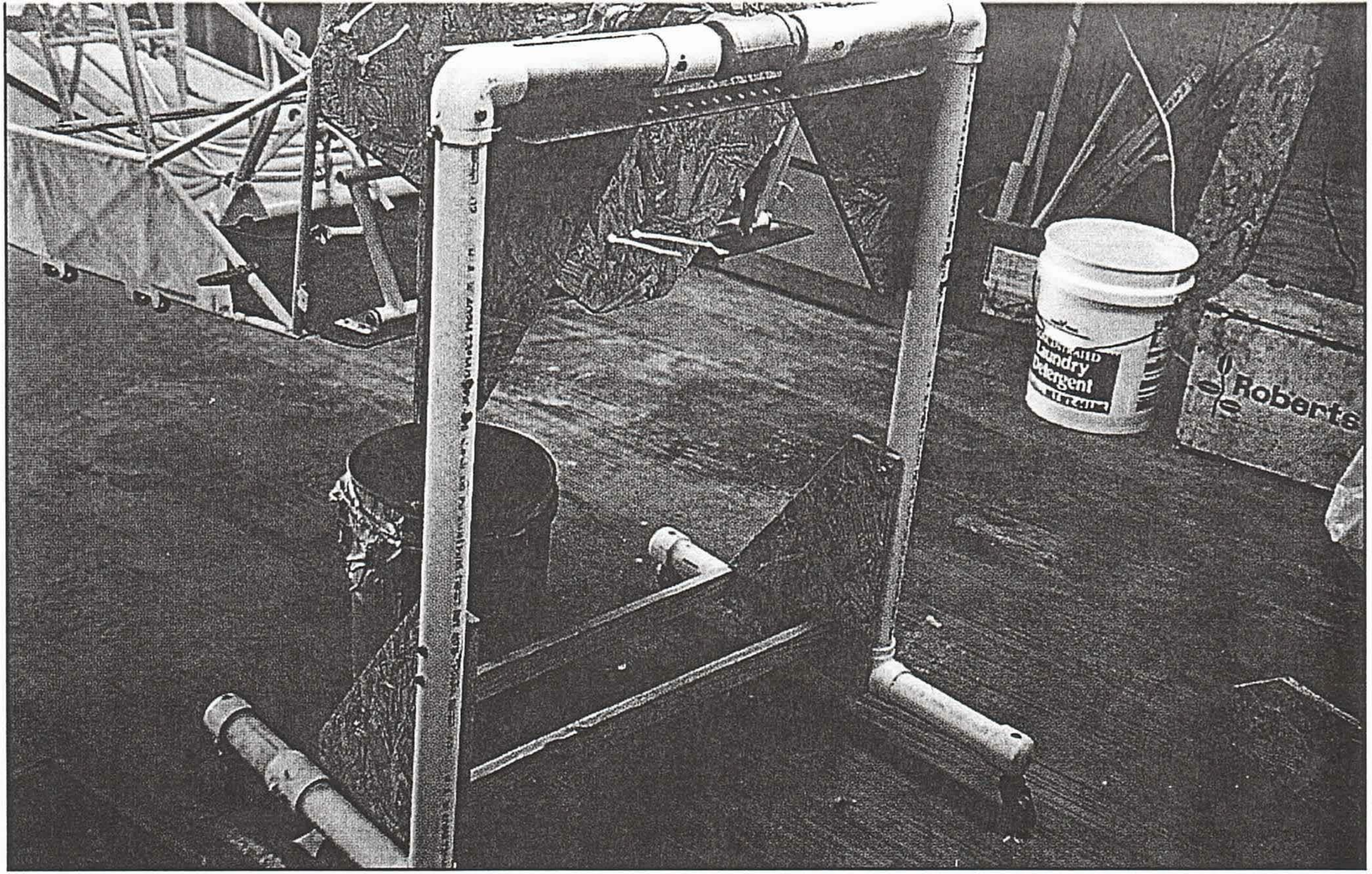


Jigs, portable wing racks and engine stands are often passed from one builder to another . . . often free for the hauling.

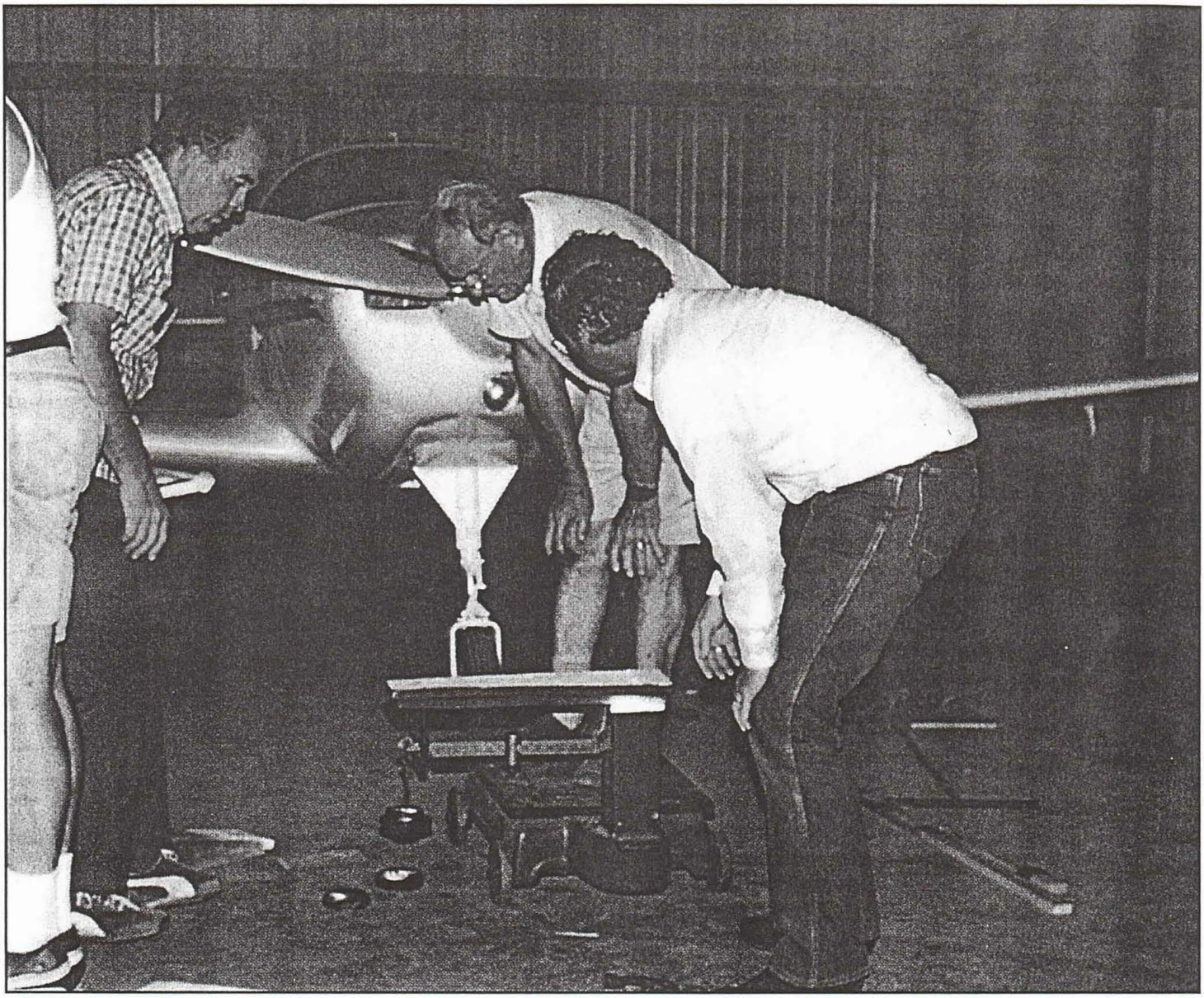
You can contact your nearest FAA Manufacturing Inspection District Office (MIDO) and ask them for their information package for homebuilders. They will be happy to send it to you. After all, it is a good way for them to familiarize you with FAA requirements and services, and at the same time to minimize their own workload.

The information package will most likely include Advisory Circular AC No. 20-27D (Certification and Operation of Amateur-Built Aircraft). This publication was written specifically for the homebuilders, spelling out in detail the rules and requirements regarding the certification and operation of homebuilt aircraft.

There is more. Included among the information currently being sent out by our local San Antonio FAA office are the various forms and guidance



Good ideas abound among builders. This rotatable fuselage, or wing stand, was assembled from PVC pipe, plywood and common plumbing connectors.



The local Chapter may have a set of weighing scales and can help you weigh your aircraft. Somehow there always seems to be plenty of manpower to give you a willing hand with your weighing, moving and even assembly tasks.

necessary to successfully launch your dream airplane.

4. **Plans and Kits — hundreds of them.** Can't decide what to build? Today, you have many more choices than the original few plans available years ago. Actually, there are well over 500 different homebuilt designs and kits to choose from.

Most of the popular highly engineered designs are being built in ever increasing numbers as is evident from numerous successful completion reports.

You can expect most plans sold today to be far more detailed than those that were available to the earlier homebuilders. Although many plans and most kits are furnished with detailed construction manuals and parts lists, some builders still fuss over the lack of detail and clarity . . . a good sign of progress, I guess.

5. **Technical references.** Forget about the dusty old WW-II technical books. You now have available dozens of books, manuals and videos especially created for the homebuilder and stocked by the EAA. Some describe the building process for a specific design while others are devoted to technical subjects such as fabric covering, welding, woodwork, etc.

It embarrasses me to blow my own horn, BUT . . . my four highly illustrated books, as offered by the EAA, are about as complete and detailed a source of technical information a builder can obtain for constructing any kind of homebuilt aircraft.

Compared to the cost of construction plans or the cost of building the airplane, your book costs will represent a minor expenditure.

A book, unlike a computer or video, can be referenced time and time again in your workshop while you work. Just dust it off and check the index for the details you need at the time.

Here is another tip. Get in the habit of reading the classified ad section of ***Sport Aviation*** to familiarize yourself with ever changing important sources of information, parts, services and supplies.

6. **Help from the designer/kit manufacturer.** Most designers are willing to help their builders because they have a stake in the successful completion of each project. After all, they have a reputation to protect. He will want you to succeed with your project and he knows the best incen-

tive for a builder is to learn who else is building. Builders addresses and phone numbers are, therefore, often a part of the plans package. Take advantage of it. Remember, the other builders are just as curious and interested as you are.

All designers will look with disfavor on a builder's attempt to structurally alter his design. In addition, he may view frivolous questions that are adequately covered in the builders manual or instructions to be quite annoying. It doesn't take a designer long to learn if a builder has even bothered to thoroughly read the instructions.

Most designers and kit manufacturers will gladly answer telephone queries. When you call, call at a reasonable time (consider the time zone differences between the east coast and the west coast) and get right down to the question you have. It helps if you jot down a note or two before calling.

Stay in the good graces of the designer by enclosing a stamped self-addressed envelope each time you write (to anyone) expecting an answer . . . postage costs add up.

7. **Builders newsletters.** Almost all designs being built in any number will be supported by some sort of a builder's newsletter. Many of these contain a wealth of information from other builders exchanging views, tips, and means for solving a particular problem they encountered.

The better newsletters, as you might expect, are those put out by the designer/manufacturer and those having a close rapport with the designer who sometimes acts as an advisor regarding matters concerning structural integrity or speculated changes.

Other newsletters may be a rather poor effort to disseminate information on a regular basis but even these may contain useful information.

Anyhow, if there is a newsletter for the type aircraft you are building, it would be worth checking into it. Subscription rates generally range from $7.50 to $15.

8. **Fly-ins.** Oshkosh, Sun 'n Fun, EAA Regional and dozens of local fly-ins are where you can see and examine real homebuilts and talk to their proud builders. Attend and support nearby fly-ins whenever you can. There is much to see and learn by being there, especially if you take a few detailed photos of the type aircraft you are building.

9. **Fly Markets and Country Stores.** These are usually regular features of most larger fly-ins. A Fly Market can be a homebuilder's treasure house where all kinds of hard-to-find aircraft parts may be found. Check these sources out. But be careful . . . know what you are buying.

10. **Computer "On Line"?** It figures. The latest information source for homebuilders is the computer . . . "surfing the web," that is.

Love it or hate it, if you have a computer and subscribe to an on line service, it can be a useful source of information for aviation matters and for specific homebuilt designs.

Those of you who can tear yourselves away from working on your projects long enough to "surf the net" can pick up all sorts of aviation information.

Most of the builders in my area are of the opinion that America On Line is a better and faster service than Compuserve because, I am told, you can log on at 28.8 Baud vs 14.4 Baud for Compuserve.

Be advised, though, that much of the conversations you monitor, and advice you garner, may not be as accurate as you would like it to be. Remember, the comments are from builders and individuals who may or may not be qualified experts, engineers and designers.

And, finally, the information you get may cost you more than you realize in time spent away from your project . . . to say nothing of the monthly on line bill you pile up.

11. **Builders' Workshops.** The better known two day workshops are those jointly sponsored by EAA and the Alexander company. These hands-on workshops are offered in different parts of the country and are very popular with first-time and/or aspiring builders.

The courses are well thought out and provide the opportunity to practice fabric covering, work with composites, sheet metal and even welding.

The cost has been about $199 for the two day work session. Check the latest issues of ***Sport Aviation*** or the Kitplanes magazines to see when workshops are scheduled nearest to you.

12. **Supply sources for builders.** I

don't know anyone who has built a homebuilt without ordering the $5 (refundable) supply catalogs from each of the two most popular homebuilt suppliers:

• Aircraft Spruce & Specialty, 201 W. Truslow Ave., Fullerton, CA 92632, phone 1-800/824-1930.

• Wicks Aircraft Supply, 410 Pine St., Highland, IL 62249, phone 1-800/221-9425.

These are not the only two suppliers, of course. There are others. However, these two reliable suppliers have large catalogs unique in that they are educational and contain technical tips as well.

Other special item supply sources are sometimes provided by the designer and may be included in your plans or instructions.

13. **Why not take advantage of these resources?** Sure, that's a lot to absorb. Many more sources for information and help than you might want to explore in a short period of time.

That's O.K. Remember, your project will last for a couple of years or so . . . just knowing where you can find help and information in the event you need it should be looked on as a valuable resource. ◆