

by RICH URAVITCH

LTV A-7 CORSAIR II



Prolific designer Rich Uravitch shows off his latest creation.

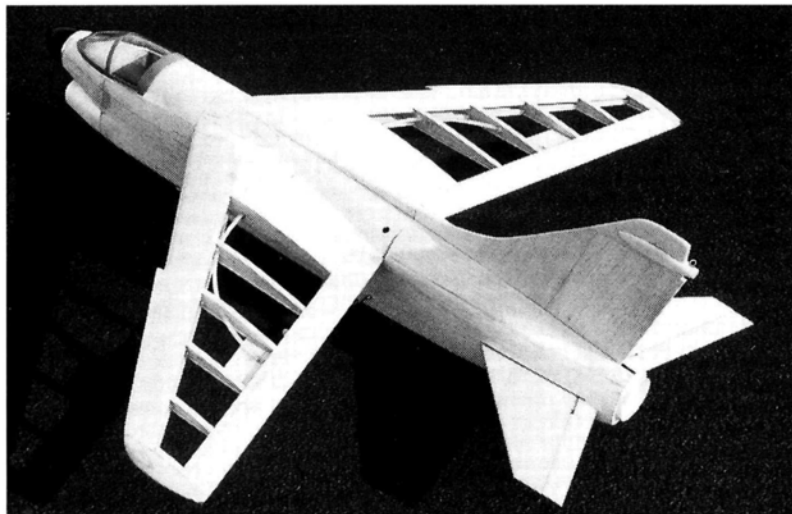
WHEN I DECIDE to design an R/C model—at least, one that I'd like to see published—I consider a number of things. Most important, it must be a subject on which I'm prepared to spend the time

required to design and build. Second—and almost as important to me—is that it appeal to as broad a range of modelers as possible. (That makes it easier to convince the magazine folks that their readers will love it and, naturally, continue to read future issues of the magazine in anticipation of similar material.) The A-7 presented here certainly satisfies requirement one, and I hope, number two.

The popularity of my little Extra 3.25 (Air Age Publishing plan no. FSP01931) reinforced my feeling that a lot of you out there really do enjoy the benefits of building and flying .25-powered, sport-scale airplanes that deliver excellent performance without blowing the



A .25-powered "jet" without the complexity of a ducted fan



The framed-up SLUF before final sanding and covering.

budget. Further evidence of the interest in smaller airplanes is the growing attendance at the annual Small Steps Fly-Ins in Dallas, TX, and Little Rock, AK. Virtually all

frames, through necessity, have to look like they do), there shouldn't be a real reason to build or fly anything that doesn't at least resemble a full-scale airplane.

Kit manufacturers have recognized this, and many are responding. Take this one level further: models that look like jets now have a broader appeal simply because—hold on to your transmitter—this is the jet age. Why do you think that some of the more popular kits being sold today look like jets? Because they're new, exciting and look great! Enough about philosophy; let's talk about building *your* A-7!

SPECIFICATIONS

Name: A-7 Corsair II
Length: 36.75 in.
Wingspan: 35.5 in.
Wing area: 327 sq. in.
Weight: 3.5 to 4 lb.
Wing loading: 24.8-28.4 oz. per sq. ft.
Power req'd: .25 to .28 2-stroke
No. of channels req'd: 4

the models flying at these two meets are .25-powered (or less!). Although I haven't, as yet, attended either of these gatherings, folks who have, tell me that when you do, you're hooked!

Like a lot of you, I read all the R/C magazines I can get my hands on—for the same reasons you do: entertainment and information. What's happening? Who's doing it? What are they flying? What's new and different?—questions for which we'd all like answers. A couple of trends seem to be emerging (to me, anyway): more and more modelers prefer designs that *look* more like *real* airplanes. When you get past the basic trainer stage (whose air-



BEFORE YOU START

Before you start hacking up balsa, I'll point out a few things that you should know about the design. If you've built a number of kits and, perhaps, one or two "scratch-built" designs from plans, you'll have absolutely no problem building this model; in fact, it's easy enough to be your first *scratch-built*

R/C airplane. Unfortunately, I can't recommend it as your first R/C model or trainer because of its size, for one thing. The attribute that makes it appealing is what will get newcomers into trouble: small, warbird or jet-type models generally have higher performance



SLUF—Super Little Unsung Flier?

At first glance, it might appear that the A-7 Corsair II is the result of a bad carrier landing with an F-8 Crusader—one that caused a significant reduction in length! Some power must have been lost also, because what was once a hot, supersonic Navy fighter has now gone sub-Mach as an attack airplane. Contrary to appearances, the A-7, nicknamed the "SLUF*," *wasn't* an attempt to use leftover F-8 spare parts when the Crusader production line came to an end. The A-7 *was*, however, an all-new, multi-service airplane that eventually provided its user with a deadly accurate weapons-delivery capability never before seen in an attack airplane.

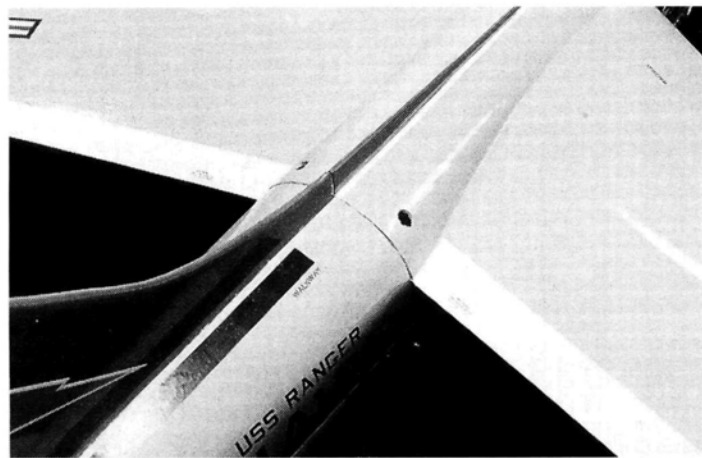
The A-7 can trace its lineage back to the Vought VE-7—a 1917 vintage biplane that made the very first carrier takeoff from the very first Navy carrier (USS Langley) on October 22, 1922. The first Corsair, although it was never "officially" named, was Vought's O2U-1 (1926), and it was followed by the 1940-era F4U bent-wing bird that warbird enthusiasts have come to know and love.

The A-7 first flew in 1965—10 years after the F-8 broke ground for the first time. Since that time, 1,551 A-7s were produced in nine variants—serving with the U.S. as well as with foreign air forces and navies. More than two-thirds of the production run were "D" and "E" models that performed yeoman's service in the confrontations history records as Viet Nam, Grenada and Beirut. The ones *not* lost in combat returned to serve on until being replaced by A-10s and F/A-18s.

Clear evidence that the basic soundness of a design sometimes *does* come full circle was demonstrated when the prototype Super Corsair, or Corsair III, emerged from LTV's hangars. Some of the length lost from the F-8 was recovered—3 feet of it anyway—and so was a supersonic capability, which was provided by the new G.E. F110 turbo-fan engine. This extensive upgrade was proposed for the A-7s serving with the Air National Guard, but, ultimately, it was not cost-effective enough to pursue.

Few A-7s remain in service today; they perform specialized duties such as flying test "chase" missions at the AF Flight Test Center; support and training simulation missions for the formerly secret F-117A; and ECM sorties with Navy recce outfits. A long career? Certainly. A distinguished career? No question. Only the legendary F-4 Phantom was in as widespread use with both the Air Force and Navy at the same time, and its place in the history of aerial warfare is assured. So it should be for the SLUF!

*SLUF: a term of endearment for the LTV A-7 meaning "Short Little Ugly F——."



Wing hold-down area. Stenciling and markings are available from Dry-Set.

capabilities and higher wing loadings that take them well out of the trainer category. The A-7 is typical of the breed. If I haven't frightened you off and you're ready to take up the challenge, clear the bench!

To make building your Corsair as easy as possible, we've decided to present the construction sequence in the same way as we did the Extra 3.25—as a step-by-step sequence, much like many of the more successful kits are presented. This sequence, used with the notes on the full-size plan,

should make building your A-7 an enjoyable undertaking rather than an exercise in frustration.

To cut down on some of your building and carving time, I am making available a vacuum-formed set of parts for this design. The package consists of a clear canopy, and high-impact plastic parts for the cowling, jet exhaust nozzle, and air-refueling

receptacle fairing as used on the Air Force A-7D variant. Cost of the package, including shipping, is \$19.95 and may be obtained from me directly.

All the tail group parts are cut out of medium $\frac{3}{16}$ -inch balsa and then sanded to final shape. Refer to the plan for grain orientation and control-linkage installation. Don't forget the hardwood block on the top of the horizontal stabilizer halves; it provides bearing support for the rudder linkage.

ENGINE INSTALLATION

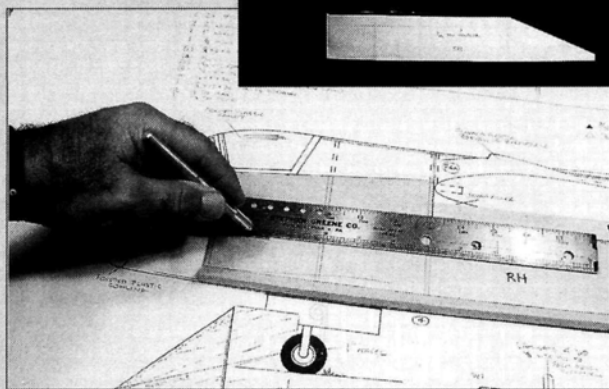
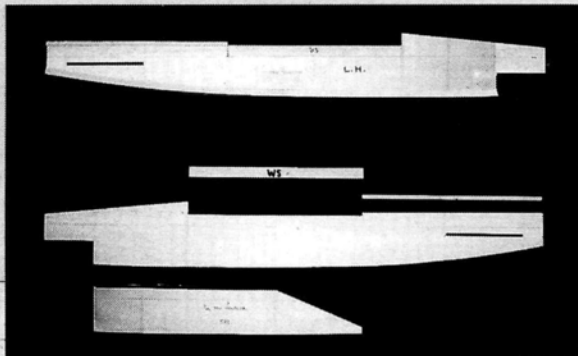
The A-7 will accommodate a variety of engines from .19 through .28 in displacement. The prototypes used an O.S.* .28 and a Magnum* .25, and the performance was terrific. For you speed freaks who are already considering stuffing a .40 into the engine compartment, I suggest that you forget it! Though the additional power might enable you to put your version of the A-7 into orbit, the additional weight of the .40 will require a huge amount of compensating weight *in the tail*, and that will push the wing loading right up there next to the brick we've all heard about! Stick with the recommended engines; you won't be disappointed!

RADIO INSTALLATION

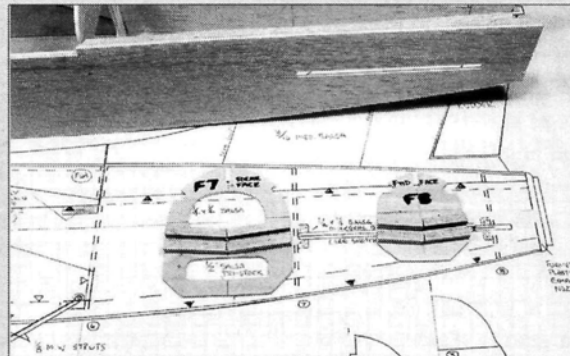
See all that empty space below the wing between bulkheads F4 and F6?—the space where your radio would normally go? Well, that's the way it's going to look forever, because nearly all of the A-7's radio equipment goes *behind* F6. Even with all the radio equipment as far aft as you can get it, you'll probably have to add ballast (dead weight) to the tail. For this reason, I suggest that you don't close off the end of the fuselage with the jet nozzle until you've com-

FUSELAGE BUILDING SEQUENCE

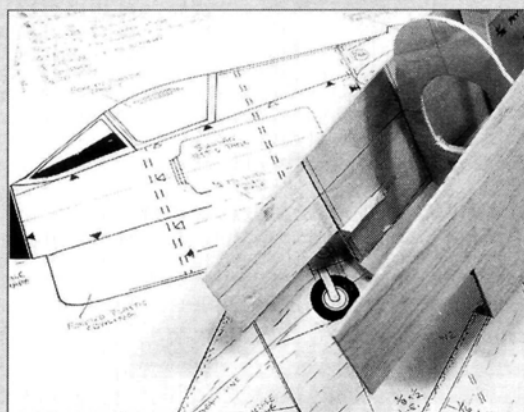
1 The basic fuselage sides, showing right-hand parts and (top) completed left-hand sub-assembly. Half-inch balsa triangle stock is used along length of lower edge.



2 To make it easier to contour the forward end of the fuselage, cut completely through the fuselage side from a point that's midway between bulkheads F2 and F3 to the forward edge of the fuselage side. Mark the bulkhead locations directly on the fuselage side, and install bulkheads F2 through F6. Use a triangle to ensure they're square.

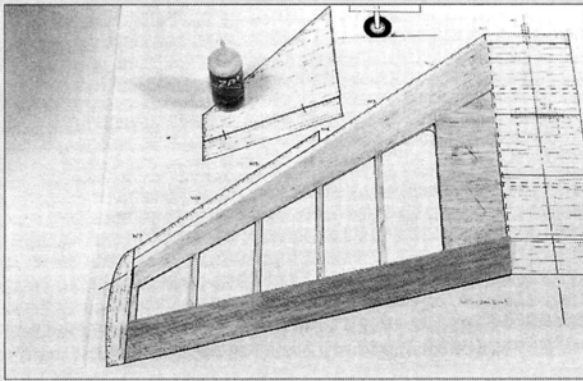


3 Above: prepare bulkheads F7 and F8 by adding $\frac{1}{4} \times \frac{1}{4}$ -inch balsa guides to the rear face of F7 and the forward face of F8. These establish both a gluing platform and a dihedral angle for the horizontal-stabilizer halves. Make sure the gap between the guides is $\frac{3}{16}$ inch to accept the stabilizer.

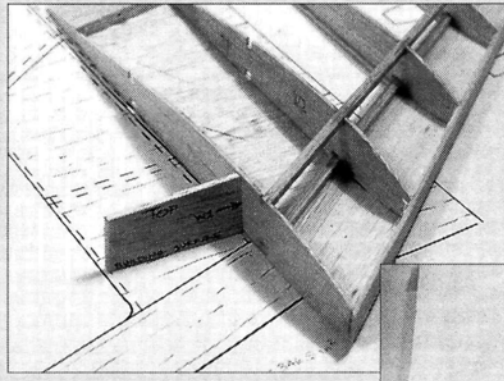


4 Glue a small piece of scrap $\frac{1}{2}$ -inch triangle stock below the cut you made in the fuselage side.

WING BUILDING SEQUENCE

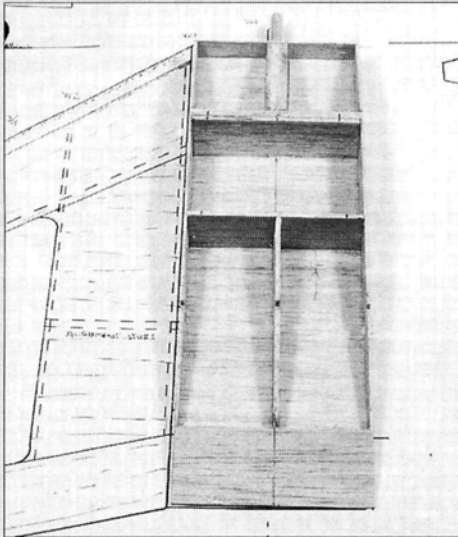
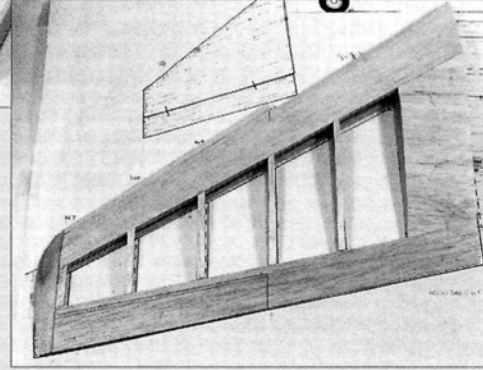


1 After covering the plan with a sheet of clear film or wax paper, pin the trailing-edge stock, sheeting and capstrips into position. Apply glue to all seams and joints. Glue the lower $\frac{3}{16} \times \frac{3}{16}$ -inch hard-balsa spar into position, followed by ribs W2 through W7. Make certain the ribs are perpendicular to the building surface. Do not glue rib W-1 into place at this time. Pin the forward end of rib W7 to the building surface, and add the upper spar and the $\frac{1}{16}$ -inch balsa sub-leading edge. Position a piece of $\frac{3}{16}$ -inch balsa behind rib W7 as shown. This is a temporary shim that will automatically build the required washout into the wing panel.

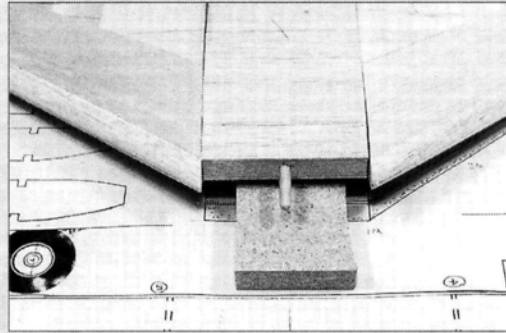


2 Glue rib W1 into position using the anhedral gauge to establish proper angle. Remember, the wing has anhedral, so the top of the rib leans slightly inboard rather than outboard as with dihedral.

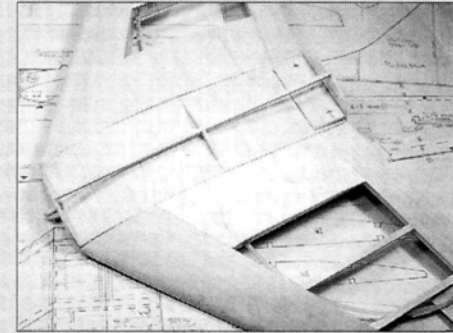
3 Add all the upper sheeting, the capstrips tip block and the leading-edge pieces, including the additional $\frac{3}{16} \times \frac{1}{2}$ -inch balsa piece that creates the leading-edge "sawtooth." Carve the leading edge to shape, and final-sand the wing panel to smooth all the seams and glue joints. Build the right-hand wing panel in the same way.



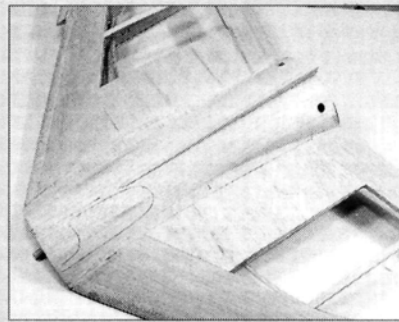
4 The wing center section is built over the plan and consists of W1, W1A, W1B, W1C and WW parts along with the trailing-edge stock and sheeting. The $\frac{3}{16} \times \frac{3}{16}$ -inch "alignment stubs" have not yet been installed.



5 Above: to help maintain the proper anhedral angle when the outer panels are joined to the center section, place the center section on a piece of $\frac{3}{4}$ -inch material (flake-board shown), attach the outer panels, at the wingtip, to contact the building surface. Don't forget to preserve the washout you've built in!



6 Above: bulkheads F4B through F6B installed on the completed wing; center stringer supports sheeting.



7 After the wing panels have been joined, and the wing hold-down provisions are incorporated; add bulkheads F4A through F6A, the upper stringer and the balsa sheeting.

pleted all the CG and balance checks. Nose-gear steering and throttle pushrods extend forward and should be anchored securely at each bulkhead.

COVERING

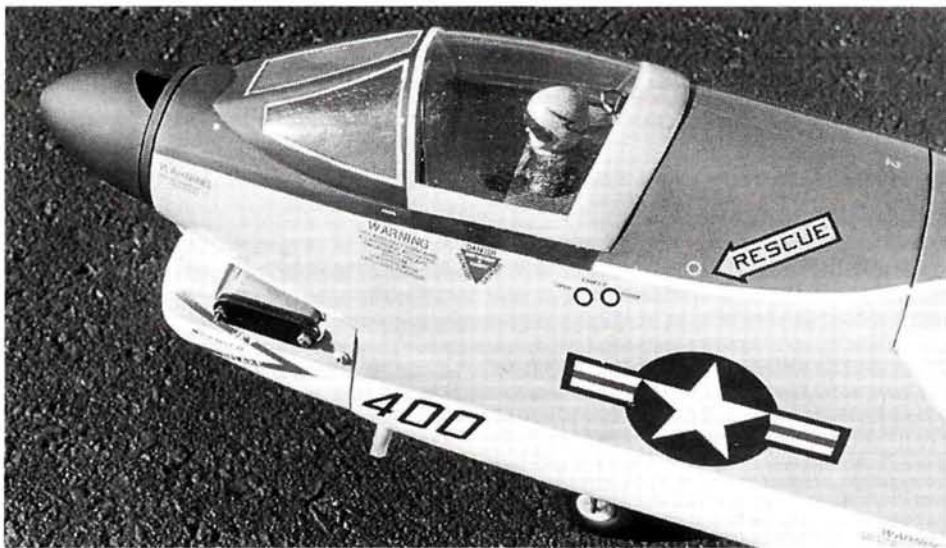
I chose light gray MonoKote* to cover the prototypes because it's a reasonable approximation of the shade used on U.S. Navy A-7s. Sticking to my allegiances by doing an Air Force A-7D would have meant painting a camouflage scheme, which I had considered, but Mike Anderson of Dry-Set Model Markings* offered to make a set of colorful Navy insignias, including all that

neat little stenciling that's so hard to duplicate.

Shortly after sending him some drawings of what I needed, I received a package that included all the markings you see in the pictures. These packages are now for sale; check with Dry-Set for the current prices.



Formed-plastic exhaust nozzle position. Piece of orange MonoKote used to create impression of hot engine "flame."



The "office" area. Note extensive stenciling, placards and markings—all available as an A-7 set especially made for this model by Dry-Set. Pilot figure is a reworked Williams Bros.* item. Keep gap between spinner and F1 to a minimum to enhance the "jet" illusion.

Dry-Set markings, like many others, are of the rub-on type. Unlike most others, however, the material used is *paint* rather than Mylar film, and that's what makes it possible to duplicate all that, itty-bitty lettering (of the *proper* type-face) for all that stenciling. They don't require clear-coating for fuel-proofing either—another plus.

FINAL COUNTDOWN

So, there it is—the project you've toiled over for at least 8 hours. Now add the spinner, pilot figure, wheels, canopy and whatever else you think it needs. Check the CG again, along with the lateral balance, and verify the control throws as indicated on the plan. Be particularly aware of the aileron deflection values; aileron sensitivity is such that it doesn't take much to roll the airplane. Also be certain that the aileron linkage is slop-free and that the surfaces return to neutral when stick pressure is released; if they don't, you'll be fighting the ailerons and probably over-correcting throughout the flight—as we were!

Put everything on charge, including your field-box batteries, and wait for a test-hop day to arrive.

CLEARED TO LAUNCH!

It had to happen, didn't it? No way to avoid it! Inevitable! The day is perfect and you head for the field to find just a hint of a breeze right down the runway. You fire up the engine, settle it down to a perfect idle, take the active and, in about 50 feet, your Corsair II is airborne, with *no* trim required.

Every maneuver you've ever thought about comes easily, and you line up on final, touch down right on the numbers and taxi back to the rousing applause of fellow club

members who had come to witness the historic event. ESPN requests an interview, and you're on the evening news. You've arrived!

And I hope the first flight of *your* A-7 goes exactly that way; mine, however, was a *little* different! The first time my model had light under its wheels and wind beneath its wings, it was in the skilled hands of Nick Zirola Jr. It was a 20-second excursion into terror that clearly indicated that I had way too much throw in the ailerons; they weren't centering properly, and the .28 in the nose could have used some right thrust. Everything else was probably perfect!

Returning to the workshop, thankful I still had an airplane, I made all the necessary changes and, a couple of days later, headed for the field once again. This time, everything *did* work! The little *stuf* was all that I expected it would be—plus a little more. It zips along at a pretty good clip with the now-invisible prop enhancing the jet illusion. It's a lot of fun to fly and always gets attention from other modelers. Its slow-flight qualities are excellent and become especially evident on final approach where you really can "drag" it in to touchdown.

If you've been caught up in this whole "jet" thing and prefer smaller airplanes that deliver great performance, give the A-7 a try; it's an inexpensive, fun-filled alternative to some of the larger higher-powered models. If smaller (.25-powered) models have captured your heart, interest, or both (as they have mine), stick around; there's more where the Extra 3.25 and the A-7 came from. How about a twin .20-powered N.A. Rockwell OV-10 Bronco? Stay tuned...!

*Addresses are listed in the Index of Manufacturers on page 177. ■

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