# President's Message

Having returned indoors to my desk after almost continuous attendance at and soaring from various gliderports since the start of the July 4<sup>th</sup> holiday, bleached and grilled by the Texas sun with 58 consecutive days without rain (so far) and almost as many with over 100°F, I sat down and tried to recall what I might have learned.

I have railed before in this column about the risks and dangers of lack of currency and yes, they are still with us, and very real. However, my focus here is at the other end of the spectrum. Familiarity can breed complacency, even if it avoids contempt. We've done the task so many times that we don't need to bother with using the checklist, or we just recite the litany without properly checking each item (and yes, that's where I let an item slip - fortunately not a crucial one).

What I am getting at is that the checks we all do are every bit as important the one-hundredth time we do them as they were on our first flight of the season. Checks, and checklists, are only as good as the checker. If not done carefully and completely, we are back to where we would be without them - dependent on chance, or luck.

While soaring is a sport (the greatest!), in this respect at least we need to be thoroughly professional, and use our checklists carefully and deliberately. This means not only our Critical Assembly Checks (you are doing yours now, aren't you?), but also pre-flight, pre-takeoff, restart and pre-landing checks, and anything else that our safety depends on.

Dean Carswell

# Auxiliary-Powered Sailplane *NEWS*

The Official Publication of the Auxiliary-powered Sailplane Association, Inc.

Dean Carswell-President • Bruce Templeton-Vice-President

ASA IS A DIVISION OF THE SOARING SOCIETY OF AMERICA

Issue #76 Vol. XII

September-October 2000



Eric Greenwell took this classic picture of the Sierra Nevada range during a spring flight in the wave at Minden, Nevada USA.

# !!Request for Photos!!

For the November-December 2000 ASA Newsletter, a photo montage of soaring activities including pilots, crews, people, sailplanes and events is planned. Readers are requested to send photos both old and new along with a short description of what, who and where. Use snail-mail to Pete Williams, 1033 Dresslerville Rd., Gardnerville, NV 89410 or Email to <ftb.@pyramid.net>. Sent photos will be returned.

Every photo submitted will be published and credit given. The objective is to commemerate **ASA's 12 year Arriversary** showing the growth of the organization from the initial 11 founders to over 390 members worldwide. In-flight scenes of sailplanes, pilots, crews and scenery as well as ground shots are needed. We are counting on our members to dig into their photo files (or take new ones) and help us make this issue a memorable one. Deadline for submission is NOW or at the latest 25 November, 2000. Please take the time to make this contribution to ASA! Thanks!

# Impressions of a Neophyte

by Jim Herd



Here are a few words to capture my early impressions of the world of Self-Launch. July 1999 - first sailplane lesson. July 2000 - first flight in my new DG800B!! I think that qualifies me as a neophyte.

I know that I have been pushing the time/progression curve, but I did NOT want to progress through buying and selling several planes in a short time. I just knew that self-launch was at the end of the rainbow - freedom, total freedom!! This "fast track" strategy brought with it a heavy burden of humility - at each step along the way I have never really had time to become fully familiar and complacent. The good news was that I had incredibly good support from all the experts around me. At Minden, Nevada, the commercial operations (Soar Minden & High Country Soaring), the self launch experts (Pete, Charm, Tupper, Karl, Steve, ....), and the awesome weather, all conspire to make a fertile ground for a neophyte.

I should quickly add that I was certainly NOT ready for the incredible burden of bureaucratic paperwork involved with importing a new sailplane. I am not complaining about the bureaucracy, each requirement seemed rooted in a rational need to close all open loops on such a profound transaction. Endless support from my wife, Jennifer, was my secret weapon! Frankly, someone should write a comprehensive guide to the whole process - "Sailplane Buying for Dummies!" Maybe there is such a document neophytes often miss such things. So, how did it all go? Well, the first challenge was in spec'ing the ship. I did this while still flying the Grob 103 trainer - I didn't even know who were the local experts at that time. So, I relied heavily on advice from my friendly U.S. importer! I went for most of the options, figuring that it was a "one time purchase" and I would eventually want most of the goodies. So far, no buyers remorse, except for that polyurethane paint option!! Shoulda, coulda, woulda!!

I had the all too frequent hassle over delayed shipment. I know it could have been a whole lot worse, but that is small consolation. On the other hand, I do believe that the industry is getting better than it once was. Tom Stowers (High Country Soaring) was an absolute treasure - advice on the buying procedures, what to do when things were going off-track, and he personally offered to go get the plane from the port! I took him up on that offer, and he collected the plane in early July. It survived the sea ride with only minor trailer damage.

I thought the FAA was very cooperative and efficient - both the HQ in Oklahoma City and the local guys in Reno. There were delays and difficulties with getting all the necessary paperwork out of Germany - I don't pretend to know why, my understanding is that the paperwork is usually all shipped inside the plane or much earlier.

Every cloud has a silver lining. These delays provided the opportunity to progress with my training - G102, ASK 21, Discus B, DG 300, ASW 20. And a variety of weather conditions and flying sites. Just as my primary instructor, Andrew McFaull, and my self launch experts had advised. They also advised, for when my plane arrived, a stringent program of tow launch in no wind, then self launch in no wind, then air start. etc.....

I carefully followed instructions. Of course, there was also the industry standard AC 61-94 training course ably administered by Tupper Robinson in his awesome DG500M.

So, what did I find with the new DG800B - N699PW? Well, I have the expected list of small imperfections - as of this writing I am still working on some of them.

Continues on page 7......

# **18-Meter and Open Class Nationals Results**Uvalde, Texas Aug 8-17, 2000

Two ASA members entered these contests: Stan Nelson, Open Class (ASH25E) and Don Pollard, 18-Meter Class (ASH26E) There were 13 Open Class and 29 in the 18-Meter USA entrants. Uvalde weather had, for the most part, good weather with cloud bases as high as 10,000 agl. Speeds in excess of 80mph were logged regularly by the leading pilots. Hein Weissenbueher clocked 90.31mph on Day 7 in his Nimbus 4 flying a 363.06mi triangle. Both Nelson and Pollard successfully completed the contest without landing out. Pollard placed first on Day 2 at 88.26mph and Nelson logged a speed of 83.34mph to capture 4th place on the same day. Open Class final scores: Nelson #10/6875pts. The top 3 were Sherman Griffith, ASH25-7501pts; Jim&Tom Payne, ASH25-7450pts & Eric Mozer, ASW22-7376pts. 18-Meter final scores: Pollard, #11/6906pts. The top 3 were Greg Chaffee, Ventus 7528pts; Bill Bartell, LAK17-7528pts and Rick Walters, Ventus-7432pts. Charlie Spratt reported Uvalde weather was classic with only one day rained out.

#### New Equipment News

By Peter How

Email: afriair@cis.co.za

DG Hugzeughau's new factory will be complete by the end of the year. Their need to achieve an even higher production rate necessitated a large new high tech building right next to the airfield at Bruchsal. At the same time the new DG1000 two seater is progressing well, with first flights any week now. There is a dramatic photo sequence of the wing break test in a heated chamber at www.dg-flugzeughau.de The wing eventually broke at just over 12g with the 20m tips bending over 4.5 meters!!

Various models will be available, from 17m club trainers to fully retractable 20m cross country ships with winglets. The wing profile was chosen for good high speed cruise, rather than optimising the glide angle at a low speed at which we rarely fly in practise. Further developments over the next few years are a flapped version and a self launcher. Span will be limited to a practical 20m, but with the new style high and narrow winglets. This may well be one of the first two seaters where no one runs away when it time to rig - being carbon, no wing panel weighs more than 80kg. Another interesting feature is the fact that the retractable main undercarriage is positioned far enough forward to eliminate the nose wheel found on all modern two seaters at the moment. The entire 2001 production is sold out already.

#### New Version Ximango Motorglider

Aeromot in Brazil have announced a new version of the AMT200, Fournier based motor glider, with a normally aspirated 100hp Rotax motor. This reduces the complexity of the turbo operation of the AMT300 and is generally accepted as being better for club and hire/fly operations. The climb rate at our altitudes is almost as good as the turbo, and in fact the continuous output rating of the motor is only 5hp less than that of the Rotax turbo. **Derek Piggot** of the UK said that the retractable Ximango was excellent in weak British thermals, due to the high aspect ratio. Visit www.ximango.com or better still get a free trip to Brazil if you order one!



#### First 3 Russia AC5MSelf-Launchers

The Nov-Dec Issue will cover AviaStroitel's new 12.6 meter powered sailplane, 26 of which are on order by U.S. pilots.

#### A Profile of ASA Member Wilfred J Toczko



On 2 July, 2000 RF4-D N7521, formerly owned by Frank Garcher of Hobart, IN arrived at Whetstone Airpark, Huachuca City, Arizona. The new owner **Wlfred J Tozko, Sr.** is an oldtimer in aviation. He soloed at John Rodgers Airport, Honolulu in January 1941and went on to teach Army Glider Pilots (TG-2/3) at Twentynine Palms, CA, Plainview, TX (dead stick school L-2/3/4) and Victorville, CA (CG-4). After over a year in the Army Glider Program, Fred went on to fly B-24 Bombers in the 8th Airforce. He was shot down over Berlin in 1944 spent a year as a POW (escaped once but was recaptured). Post WWII service was as an Army Intelligence Officer. He resumed glider flying at the Tucson Soaring Club, Arizona in January 1989. Since then he has owned and flown a Sportavia RF-5 and a Polish Ogar. Fred, who turned 79 in March, is looking foward to flying this latest acquisition for many years to come!

Editors's Note: Fred was at Hickam Field when the Japanese attacked Pearl Harbor Dec. 7, 1941. He fired 21 rounds from his 45 pistol at the attackers then ran to the barracks and got a 30 cal. water cooled machine gun. The base water supply had been cut so he went to the coke machine and grabbed enough bottles of Coke to fill the water tank reservoir and started firing away at the enemy aircraft. Fred holds a Private Pilot's Rating in Airplanes and Gliders and has 3,000 flying hrs.Email: <wjtocz@earthlink.net>



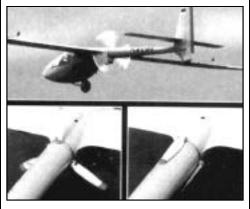
Three generations of powered sailplane development are lined up in High Country Soaring's hangar at Minden. L to R: Nelson Funston's new Nimbus 4M, Helmut Köhler's DG-400 and Stele Köhler's Ventus 2cM. At the far left is V8, Don Briggs Nimbus 4DM.

#### Publications Available from ASA

Rotax 501/505/535 Pilots Manual\$2ea
Rotax 501/505/535 Repair Manual\$3ea
Rotax 501/505/535 Parts Manual\$4ea
Self-Launching Sailplane Operation\$4
DG-800 Pilot's Brief\$3
Flying the DG-400\$3
Safety Survey of Motorgliders\$3
Powered Sailplane Maint/Service/Repair &
Defect Survey\$3
Incident/Accident Survey\$3
Safely Flying Self-Launch Sailplanes\$3
SOLO 2350C Engine Service Manual\$4
FAA AC61-94 Checkout in Motorglider.\$1
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#### Web Site Numbers

NAA- http://www.naa-usa.org SSA- http://www.ssa.org ASA-http://www.motorglider.org FAI- http://www.fai.org EAA- http://eaa.org Eric Greenwell is the ASA Web Master. You can email him at egreewell@prodigy.net



### Unique Self-Launcher Concept

Shown above is the concept prototype WK-01, a tandem seat aircraft currently under development by Werner Kuffner of Germany. Other models to follow include the WK-40, a 48:1 high performance powered sailplane, the WK-20, a General Aviation VLA; the WK-50, an acrobatic and training aircraft and the WK-30, a multipurpose aircraft. Werner Kuffner is seeking serious investors, dealers and service partners. Interested parties can contact Werner Kuffner Flugzeugtechnik at 011-49-7467-910370; Fax:-910371 or Email: info@wk-kuffner.de

#### FOR SALE: 1998 AMT-200 SUPER XIMANGO MOTORGLIDER

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A summer thunderstorm with its classic anvil head has already formed prior to noon as pilots prepare to launch at Minden, NV.

# Microburst Experience

I encountered my first microburst on a recent 500K out and return speed record attempt. Having arrived at the turning point one minute early I was exceeding the US speed record for motorgliders by a slim margin. Perhaps this was the day. However on the return leg a line of thunderstorms were blocking the course line. I could see rain and lightning striking the ground and had to make a decision which course to take to go between the cells. As I picked my way under a solid overcast toward a sunny area ahead, I approached to within a mile of a solid downpour of rain. This was a narrow shower and the vertical rain appeared to strike the ground and then curve upward like inverted flower petals. I then encountered very smooth lift allowing a climb from about 8,000 to 12,800 msl alongside this shower. Ground level in this area just North of Mono Lake was about 6.500'msl. I then began to circumnavigate this downpour toward the edge of the clouds where sunlight and blue sky could be seen. Large drops of rain began peppering the aircraft with loud smacks. Suddenly the aircraft entered very turbulent air and began an almost vertical descent leaving 12,000 ft and plunging down to 7,250 ft in a period of about 3 minutes. It was closely akin to being in a rapidly descending elevator as there appeared to be little forward motion and ground objects rapidly grew larger. It also became increasingly difficult to keep the wings level. It was time for the engine. It took a very long 19 sec to get it fully up while fighting extreme turbulence. I pushed the starter button and got only a cough. Hit the prime button and the engine finally started. Almost immediately the vario showed 17kts up. The climb was almost vertical back to 12,800 ft. I had just experienced firsthand a microburst.

The printout of the GPS software baro trace confirmed it was an almost vertical descent and climb. Had I run the engine while in the sink, the glider would have still descended at least 6-700 fpm, unable to overcome the sink. What I learned was to stay well clear of thunderstorm downpours even if it means backtracking to the last known lift area.

Pete Williams

# News & Views



Jerry Paszowieki inspects the installation of the MidWest rotary engine as it is lowered into the engine bay of his ASH 26E at High Country Soaring in Minden. The engine was removed to locate and repair a fuel hose leak forward of the fire wall. See Insert page for details on this leak.

JmHerd took delivery of and checked out in his new DG-800B while at Minden in June and July. Seen here with his wife, Jenifer who is also a sailplane pilot, Jim has 165 hrs in gliders and has time in Grob 103/102, ASK-21, CZD Puchaz, DG-500M & 800B. He also has time in hang gliders. Jennifer has 45hrs in gliders. Jim enjoys the freedom of flying a motorized sailplane and Jennifer is looking forward to checking out in the 800B. See Impressions of a Neophyte on





Franz Ott spent several weeks at Minden in July flying a DG-800B shared by two partners, Oristian Waldschnidt and Manfred Werth Franz earned his Diamond Altitude during his stay. He is a retired school teacher from Germany and an instructor in his flying club. He has 3,500 hrs in sailplanes, 2,000 of which are in powered sailplanes. Oristian (inset) completed his 1000K while at Minden

# Solar Panel Battery Charging

Many powered sailplane pilots regularly use a solar panel to keep their batteries charged. The main advantage is a fully charged battery is always available for starting the engine. This article addresses size and output of solar panels, battery capacity, how the charge controller works, charging two separate battery systems and checking system output.

SIZE: Solar module output varies almost in direct proportion to panel size. The optimum output that will serve most battery systems used in powered sailplanes should be at least 10 watts or about 500ma per hour. For a more rapid recharge a 20 watt (1.4amp) panel is recommended. Charging time depends on the voltage of the battery at the beginning of the charge cycle. It also depends on ampere hr. capacity of the battery and the angle at which the sun strikes the panel.

<u>CAPACITY:</u> As a battery ages, its ability to accept and hold a charge diminishes. That is, if a battery's voltage goes up quickly during a charge, but depletes quickly when a load is applied (raising the engine or cranking the prop) the battery's capacity to hold a charge is limited and a new battery should be installed. A good sign that a battery is healthy is its voltage rises slowly while being charged. The average useful life of a rechargable sealed lead acid battery is 4-5 years and depends on many factors such as heat, number of deep discharge cycles, recharging system used, terminals connection integrity, cold cranking amps rating and shelf life prior to installation.

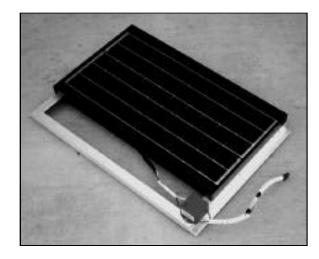
CHARGING TIME: For sailplane batteries, there are two basic solar panel charging needs: long term and short term. Long term is best described as exposure to sunlight for about 8-10 hours to charge a 12V-20ah battery from 12.5V to 12.8 volts. The lower the ampere hour rating of the battery, the quicker it will charge. This applies only to a battery that has not been through several deep discharge cycles and is relatively new (1-3 years old). Short term charging can be as little as 3-6 hrs and varies according to the amperage output of the solar panel. A 12V battery is fully charged when it reads about 14V while the solar panel is connected. After applying a load (raising the engine), it should read at least 12.8V. During engine cranking the battery voltage can drop to as low as 11.8V but should rebound to 12.8V or better after starting. While the engine is running the generator is on the line replenishing the battery. However, since most engine runs last only about 15 minutes, the battery has not received a complete recharge.

CHARGE CONTROLLERS: Many charge controllers including AC-DC plug in chargers are essentially trickle chargers that bring the voltage up and then continue to trickle charge at a low ah rate once the battery is fully charged. Trickle charging never allows the battery to "rest" and eventually sulfates the positive plates shortening its useful life. Other controllers like the Bobier bring the battery up to full charge and then shut off allowing the voltage to drift down to a preset value before switching on and bringing the battery back up to a full charge. This sequence is repeated and allows the battery to "rest" between charge cycles. Bobier also produces a charge controller that will charge two separate batteries simultaneously by bringing the lower voltage battery up first and then bringing both batteries up to a full charge.

#### CHECKING SOLAR CHARGING OUTPUT:

Read the battery voltage <u>prior</u> to plugging in the solar charger. Read again after the solar charger has been connected for a few minutes. The voltage should be rising.

SOME TIPS: Conserving battery power during a flight can be accomplished by turning off the VHF radio from time to time and limiting the length of transmissions. High audio vario speaker volume uses power. Most GPS and flight director systems use about 300ma/hr. A separate battery is recommended if a transponder is installed. Inspect the plug in connections from the solar panel controller to the batteries making sure all contacts are secure and mating properly. Use of Sermos type connectors is recommended due to the silver plated contacts which have a very low resistance. In the wiring cables use soldered connections whenever possible. Seal all connector wiring exits with silicone and keep the face of the solar module wiped clean. Solar panels and charge controllers are essentially water-proof and can be left exposed to the elements without damage. Always leave the solar panel attached to the batteries while on the ground and detach only after the engine is raised and just before you enter the cockpit. A solar panel mounted atop the instrument console is helpful in flight but only marginally effective as shadows continually pass over it and the sun angle is not optimized. It will, however, slightly slow the battery's voltage drop



Typical Solar Module setup with charge controller. Shown is a 20 Watt, 1.38 Amp system with a footprint of 24.3 X 16.5 inches.

Submitted by Pete Williams

#### Neophyte....Continued from page 2

Tupper Robinson has a great ear for fine tuning the engine to run sweetly at altitude (4700 feet). Ihave also experienced a couple of surprises - remember, I am a neophyte. First, the flight controls are very much more precise and responsive than the ASW20, and the glide performance is astounding - this is good, but it also means less tolerance for imperfect piloting. Luckily, I had Andrew McFaull talking me through my first few flights - I really recommend that approach for any neophyte. The surprise here was that the steerable tailwheel was not my initial challenge (flying in light winds).

The second surprise came on the second flying day. It was early in the day and I was futsing with my instruments - actually, checking the ASI (which seemed to be stuck). I dismounted the cockpit, knelt at the side, and studied the instruments for about a minute. Then I sniffed smoke! The front rail of my canopy was smoldering!!! Yes, the open canopy had acted like a lens, in concert with a low early morning sun position, and a plane oriented directly tail-to-the-sun, the recipe for FIRE was complete. Luckily it was just a superficial surface burn, but this happened in less than 2 minutes of exposure!! Despite reading earlier about this phenomenon, this was astounding, at least to a neophyte! Maybe there is a lesson here for all pilots.

Now I think of it, there was a third surprise. Despite a series of almost perfect landings, I had one that was a tad firm. Several pilots and an instructor saw the event and said it was a solid bounce, but not that bad. Nonetheless, the main tire suffered a kind of slit in the sidewall - about one third around the circumference. The consensus of several experts was that it was not caused by the tire pinching on the rim, it was probably caused by the close proximity of the disc brake hardware. The extra "bulge" of a firm landing moved the tire sidewall in contact with the non-moving metal. A check of a couple of other similar planes found another with apparently the same defect. The defects on mine and the other plane were not through to the inner fabric and pressure was maintained. Nonetheless, here is another reason for a thorough preflight every time!

In summary, my observations over the past year include the impression that self-launch owners spend about 2 hours a day with their heads in the engine box - so I was braced with a brand new set of wrenches! Fact is, the engine has performed flawlessly so far. Other issues have been quite minor - and certainly overshadowed by some great flights (up to 3 hours and 15,000 feet) and truly remarkable performance. Yes, I am going to really enjoy my self-launcher!...... *Jim Herd* 

# More on Fuel System Integrity

The Mar-Apr and May-June issues have dealt with various problems with the fuel system including air in the lines, carburetors and fuel hose leaks. Recent experience with leaks at the fuel pump nipple connections has shown the need to inspect these connections very carefully especially if they are plastic fittings. In my DG-800B I found a crack near where the plastic nipple emerges from the threaded base. The leak occurred only when the system was under pressure while the engine was running or the fuel pump was on. The fuel migrated to the towhook area and after evaporation was discovered as an oily residue clinging to the towhook Some oily residue was also discovered on the fuselage bottom just aft of the towhook. Investigation revealed a slightly bent nipple with a crack at its base. This bending was most likely due to tightening the hose clamp on the nipple causing it to bend and take a set in one direction. The tighter the hose clamp, the more bending torsion was applied to the nipple resulting eventually in a crack. Brass nipple fittings are available at auto parts houses that will fit the fuel pump which is a USA-made FACET brand. Pilots are encouraged to install these brass fittings. In my opinion, the use nylon Tees or straight connectors anywhere in the fuel hose system should be discontinued. For safety's sake and service longevity, they should all be replaced with metal, brass or copper tubing.

Submitted by Pete Williams

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Membership in ASA is open to anyone interested in powered sailplanes. Write or call: Brian Utley, ASA Membership Chairman, 1930 S.W. 8th St.,Boca Raton, FL 33486-5205 Tel: 561-750-6876 Fax: 561-393-7458 Annual Dues: \$20 USA, \$25 International

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Newsletter published Jan/Feb,
Mar/Apr,May/June
July/Aug, Sept/Oct, Nov/Dec
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PRINTED IN THE U.S.A.

ASA Web Site: (www.motorglider.org)

#### **Newsletter Publication**

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Optimum Offset......Printing and Fulfillment
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Pete Williams, ASA Publications Manager, is the Editor, and Print Production Manager for the newsletter. As such, he supervises and coordinates with a printer located in Minden, Nevada. The Newsletter is mailed from Minden.

Contributors are requested to submit hardcopy typewritten or keyboarded text . 12pt font size is best for accurate scanning. If submitting text on a floppy disk, please advise the word processing program used. Text may be edited as required to fit the newsletter. The newsletter is produced on a Macintosh G-3 using AppleWorks word processing software. Photos are always welcome and will be returned promptly.

The newsletter is delivered to the printer the last week in Jan; Mar; May; July; Sept & Nov. ASA desires input on what the members want in this newsletter and we are doing all we can to keep it informative and interesting. It's your newsletter, so please let us hear from you!

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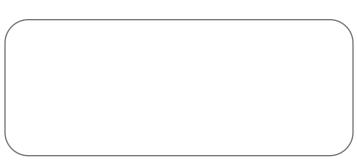
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September-October 2000 NEWSTETTER

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