SMOKE SIGNALS

NEWSLETTER

I recently found out that I have cataracts in both my eyes and will need two surgeries this month to correct the problems. Although this type of procedure is very common these days it still is a scary thing knowing that the doctor will be working in an area we find so precious. I think the following poem expresses better than I can that our sight is a beautiful gift that we should treasure always and never take for granted.

With that in mind this will be my last edition until I feel that I can spend the hours on the computer necessary to create the Newsletter..

The Gift of Sight

What would life be like without the gift of sight,
Imprisoned in a world of permanent night?
Have you e'er stopped to ponder a theme such as this,
Grasping the immensity of all we would miss?
The delicate beauty of a flower, its petals unfurled;
The many scenic wonders of our so diverse world -
Oceans pounding the coastline, a cascading waterfall,
The snow-capped summits of towering mountains so tall;
The scorching noon-day sun blazing down from the skies;
The inquisitiveness in a little child's eyes;
The radiant bride and proud husband, their bliss unconcealed,
Their heartfelt vows of love by a tender kiss sweetly sealed.
The myriad of colours could not thrill the heart,
Nor could we enjoy reading, or viewing works of art;
Monuments to man's achievements could not inspire,
Even the opposite sex we could not admire;
And into our loved ones' faces we could not gaze at all,
Ne'er seeing their smiles, furrowed brows nor their teardrops fall.
Yes, our lives truly are enriched to a major degree
By everything all around we are privileged to see,
And considering these things it is surely only but right
That we thank the God of creation for the priceless gift of sight.

SMOKE SIGNALS

Joe Pellegrino and I served on the Meroke Executive board in 2012 and even then Joe was dealing with health issues. Joe was always sending me articles for the Newsletter which I always appreciated so when he was convalescing at home after one of his hospital stays this year I called him to see if he would be willing and able to help me put together this little Kangke electric trainer that I wanted to build with some modifications. It was much too easy a project for the likes and skills of Joe but he was excited to do it. Unfortunately we never could connect and Joe passed before we could get together to build it.

At first I had a totally different idea of how this article should be written but after I sent Joe's daughter Michele an e-mail asking her to provide me with some more information about him so I could write something in this months Newsletter I realized that she wrote about Joe better than I ever could.. Here are my questions and Michele's answers, as you will see Joe Pellegrino had an incredible career and lived ***A WONDERFUL LIFE****.*

To answer your questions:

FAMILY...

wife Veronica - but her nickname is Ronnie. They were married for 45 years. Daddy truly loved my mom - anyone that knew him could see it easily. He was very devoted to her (and her to him); she was his rock, his strength, best friend... his everything. My mom dedicated her entire being to caring for him. She refused respite and made many sacrifices these last few years. She is quite an amazing woman.

children (in chronological order): Michele, Joseph, Maria and Donna.

There are seven grandchildren: Ryan, Emily, Jocelyn, Oliver, Kaleigh, Moira and RJ (Richard Joseph but everyone calls him RJ)

WORK...what was his job? where? how may years? retired?

Please see below. For my father's 60th birthday we had my dad entered on the honor wall in the Cradle of Aviation Museum because so much of his life was dedicated to working in the aerospace industry. In fact, there are several pieces in the museum my father personally worked on over the years, including the LEM module (although I believe the piece in the museum is a replica.) Anyway, if you type his name in the computer, the information below comes up on the computer screen. Daddy was so happy and touched when we gave him the plaque for his birthday and explained what we had done. I was so glad we did it. :)

CALENDAR

JULY 3, 2014
Club Meeting

JULY 17, 2014
Club Meeting

Send all suggestions to:
newsletter@meroke.com

BIRTHDAYS

July 7 Joe Pelegrino

July 12 Stan Blum

July 20 Gene Garavelli

SMOKE SIGNALS

PAST EXPERIENCE OF JOSEPH C. PELLEGRINO IN AEROSPACE

Joseph C. Pellegrino started in the Aerospace Industry in June 1966. His first job was with the Grumman Aircraft Engineering Company located in Bethpage, Long Island, NY. Over a span of 28+ years he worked as a Structural Design Engineer, Fluid Power Engineer, Teacher in the corporate Training Department and Liaison Engineer for the restoration of WWII aircraft built by Grumman. His resume of projects include: A-6E TRIM A/C The Intruder; B-1B; C2A Cod Cargo Plane; E2C Hawkeye; EA-6B Prowler; F100; F14 Tomcat; F-4F Wildcat; F-6F Hellcat; GIV; Hydrofoil Gun Boats; JPATS Multi-Service Jet Trainer; LEM; OAO; OV1D Mohawk; Preliminary Design Team; S2T Taiwanese Tracker; Space Shuttle; X-29

Joseph holds three USA Patents as a Fluid Power Engineer: for lock indicators, hydraulic & mechanical; and pyrotechnic ejection system sequencing valve (seat ejection).

Joseph worked for Arkwin Industries as a Senior Design Engineer designing hydraulic components for commercial and military aircraft before he retired due to medical issues. Programs he had worked on were: B717 (Commercial Airliner); A319-321 (commercial Airliner); A340 (Commercial Airliner); RAH-66 (Comanche Helicopter); S-76 Helicopter; S-92 Helicopter; JSF (Joint Strike Fighter) and A400M (Military Cargo/Transport). Additionally, he designed many test fixtures used to test hydraulic components designed by Arkwin Industries.

CHURCH...HE WAS A DEACON?, WHAT CHURCH? HOW LONG?
Daddy was a deacon at St. Christophers Church in Baldwin until he retired due to health issues. He was ordained on May 21, 1994. In 1999, he was professed as a secular Franciscan in the Our Lady of Atonement Fraternity in Long Beach. Daddy was very dedicated to St. Francis of Assisi. Ironically, it was the name my son choose for his Confirmation this past November, not knowing about my dad's devotion to him. (I did tell Ryan after he made his decision but it was nice that he made his decision on his own without knowing it.) Daddy married my husband and I almost 17 years ago. He baptized all of his grandchildren. He administered the Sacrament of First Holy Communion to Ryan and Kaleigh. (Unfortunately his health deteriorated too much for him to do it for the other grandchildren).

YOU SAID HE WANTED TO BE AN ENGINEER, NOT ON A TRAIN I PRESUME, WHAT KIND, WHY DIDN'T HE?
Actually, my dad did NOT want to be an engineer. He wanted to be an architect. He was very talented at designing. He made the most beautifully detailed dollhouse for my mom when I was younger, right down to the individually hand cut shingles on the roof. His father insisted he be an aeronautical engineer. Daddy never said why.

WHAT HE FELT WAS HIS BIGGEST ACCOMPLISHMENT? IF YOU KNOW. ANYTHING ELSE YOU FEEL I SHOULD KNOW
That is a very interesting and difficult question to answer. I suppose I would say that I believe it was to be a deacon, in service of the Lord. He was very dedicated to helping others. So much so that he wrote a book, Journey of a Servant, (ISBN: 978-1-62838-535-9) telling his story of how he became a deacon. His hope was that it would inspire others. It gives a brief bio of how he became a deacon and some of his homilies. Daddy was a gifted speaker. People would be in awe of him when he spoke. He was very proud and happy to have written and published his book. It took him three years to get it published - it only happened just a couple of months before he died.

I hope this information was helpful. If you have anymore questions, I will do my best to answer them
Enjoy your day - and thank you for caring so much about my dad. :)
- Michele

SMOKE SIGNALS

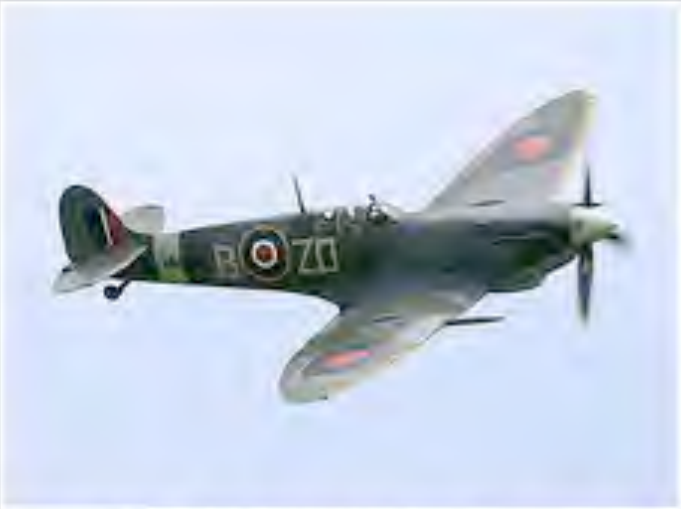
Here is one of the last articles Joe Pelegrino submitted to me for the Newsletter. I honor him with this publication and hope Joe's family can find peace and solace with his passing.

SUPERMARINE SPITFIRE

The Supermarine Spitfire is a British single-seat fighter aircraft that was used by the Royal Air Force and many other Allied countries during and after the Second World War. The Spitfire was built in many variants, using several wing configurations, and was produced in greater numbers than any other British aircraft. The Spitfire was designed as a short-range, high-performance interceptor aircraft by R. J. Mitchell, chief designer at Supermarine Aviation Works (which operated as a subsidiary of Vickers-Armstrong from 1928). In accordance with its role as an interceptor, Mitchell designed the Spitfire's distinctive elliptical wing to have the thinnest possible cross-section; this thin wing enabled the Spitfire to have a higher top speed than several contemporary fighters, including the Hawker Hurricane. Mitchell continued to refine the design until his death from cancer in 1937, whereupon his colleague Joseph Smith took over as chief designer, overseeing the development of the Spitfire through its multitude of variants.

During the Battle of Britain (July–October 1940), the Spitfire was perceived by the public to be the RAF fighter, although the Hawker Hurricane shouldered a greater proportion of the burden against the Luftwaffe. However, because of its higher performance, Spitfire units had a lower attrition rate and a higher victory-to-loss ratio than those flying Hurricanes.

After the Battle of Britain, the Spitfire superseded the Hurricane to become the backbone of RAF Fighter Command, and saw action in the European, Mediterranean, Pacific and the South-East Asian theatres. Much loved by its pilots, the Spitfire served in several roles, including interceptor, photo-reconnaissance, fighter-bomber and trainer, and it continued to serve in these roles until the 1950s.



Spitfire LF Mk IX, MH434 being flown by Ray Hanna in 2005. This aircraft shot down an FW 190 in 1943 while serving with 222 Squadron RAF.

Role	Fighter / Photo-reconnaissance aircraft
Manufacturer	Supermarine
Designer	R. J. Mitchell
First flight	5 March 1936
Introduction	4 August 1938
Retired	1961 Irish Air Corps
Primary user	Royal Air Force
Produced	1938–1948
Number built	20,351
Unit cost	£12,604 (Estonian order for 12 Spitfires in 1939)
Variants	Supermarine Seafire Supermarine Spiteful

Origins

R. J. Mitchell's 1931 design to meet Air Ministry specification F7/30 for a new and modern fighter capable of 250 mph (400 km/h), the Supermarine Type 224, was an open-cockpit monoplane with bulky gull-wings and a large fixed undercarriage powered by the 600 horsepower (450 kW) evaporative-cooled Rolls-Royce Goshawk engine. This made its first flight in February 1934. The Type 224 was a big disappointment to Mitchell and his design team, who immediately embarked on a series of "cleaned-up" designs, using their experience with the Schneider Trophy seaplanes as a starting point. Of the seven designs tendered to F7/30, the Gloster Gladiator biplane was accepted for service.

Mitchell had already begun working on a new aircraft, designated Type 300, with a retractable undercarriage and the wingspan reduced by 6 ft (1.8 m). This was submitted to the Air Ministry in July 1934, but was not accepted. The design then evolved through a number of changes, including the incorporation of a faired, enclosed cockpit, oxygen-breathing apparatus, smaller and thinner wings, and the newly developed, more powerful Rolls-Royce PV-XII V-12 engine, later named the "Merlin". In November 1934 Mitchell, with the backing of Supermarine's owner, Vickers-Armstrong, started detailed design work on this refined version of the Type 300 and, on 1 December 1934, the Air Ministry issued a contract AM 361140/34, providing £10,000 for the construction of Mitchell's improved F7/30 design. On 3 January 1935, the Air Ministry formalized the contract and a new Specification F10/35 was written around the aircraft.

In April 1935, the armament was changed from two .303 in (7.7 mm) Vickers machine guns in each wing to four .303 in (7.7 mm) Browning's, following a recommendation by Squadron Leader Ralph Sorley of the Operational Requirements section at the Air Ministry. On 5 March 1936, the prototype (K5054) took off on its first flight from Eastleigh Aerodrome (later Southampton Airport). At the controls was Captain Joseph "Mutt" Summers, chief test pilot for Vickers (Aviation) Ltd., who is quoted as saying "Don't touch anything", on landing. This eight-minute flight came four months after the maiden flight of the contemporary Hurricane.

K5054 was fitted with a new propeller, and Summers flew the aircraft on 10 March 1936; during this flight the undercarriage was retracted for the first time. After the fourth flight, a new engine was fitted, and Summers left the test-flying to his assistants, Jeffrey Quill and George Pickering. They soon discovered that the Spitfire was a very good aircraft, but not perfect. The rudder was over-sensitive and the top speed was just 330 mph (528 km/h), little faster than Sydney Camm's new Merlin-powered Hurricane. A new and better-shaped wooden propeller meant the Spitfire reached 348 mph (557 km/h) in level flight in mid-May, when Summers flew K5054 to RAF Martlesham Heath and handed the aircraft over to Squadron Leader Anderson of the Aeroplane & Armament Experimental Establishment (A&AEE). Here, Flight Lieutenant Humphrey Edwardes-Jones took over the prototype for the RAF. He had been given orders to fly the aircraft and then to make his report to the Air Ministry on landing. Edwardes-Jones's report was positive; his only request was that the Spitfire be equipped with an undercarriage position indicator. A week later, on 3 June 1936, the Air Ministry placed an order for 310 Spitfires, before any formal report had been issued by the A&AEE; interim reports were later issued on a piecemeal basis.

Into production

The British public first saw the Spitfire at the RAF Hendon air-display on Saturday 27 June 1936. Although full-scale production was supposed to begin immediately, there were numerous problems which could not be overcome for some time and the first production Spitfire, K9787, did not roll off the Woolston, Southampton assembly line until mid-1938. The first and most immediate problem was that the main Supermarine factory at Woolston was already working at full capacity fulfilling orders for Walrus and Stranraer flying boats. Although outside contractors were supposed to be involved in manufacturing many important Spitfire components, especially the wings, Vickers-Armstrong (the parent company) was reluctant to see the Spitfire being manufactured by outside concerns and was slow to release the necessary blueprints and subcomponents. As a result of the delays in getting the Spitfire into full production, the Air Ministry put forward a plan that production of the Spitfire be stopped after the initial order for 310, after which Supermarine would build Bristol Beaufighters. The managements of Supermarine and Vickers were able to convince the Air Ministry that the problems could be overcome and further orders were placed for 200 Spitfires on 24 March 1938, the two orders covering the K, L and N prefix serial numbers.

In February 1936 the director of Vickers-Armstrongs, Sir Robert MacLean, guaranteed production of five aircraft a week, beginning 15 months after an order was placed. On 3 June 1936, the Air Ministry placed an order for 310 aircraft, for a price of £1,395,000. Full-scale production of the Spitfire began at Supermarine's facility in Woolston, Southampton, but it quickly became clear that the order could not be completed in the 15 months promised. Supermarine was a small company, already busy building the Walrus and Stranraer, and its parent company, Vickers, was busy building the Wellington. The initial solution was to subcontract the work. The first production Spitfire rolled off the assembly line in mid-1938, and was flown by Jeffrey Quill on 15 May 1938, almost 24 months after the initial order.

The final cost of the first 310 aircraft, after delays and increased program costs, came to £1,870,242 or £1,533 more per aircraft than originally estimated. Production aircraft cost about £9,500. The most expensive components were the hand-fabricated and finished fuselage at approximately £2,500, then the Rolls-Royce Merlin engine at £2,000, followed by the wings at £1,800 a pair, guns and undercarriage, both at £800 each, and the propeller at £350.

Manufacturing at Castle Bromwich

In 1935, the Air Ministry approached Morris Motors Limited to ask how quickly their Cowley plant could be turned to aircraft production. This informal asking of major manufacturing facilities was turned into a formal plan to boost British aircraft production capacity in 1936, as the Shadow factory plan, under the leadership of Herbert Austin. Austin was briefed to build nine new factories, and further supplement the existing British car manufacturing industry, by either adding to its overall capacity or capability to reorganize to produce aircraft and their engines.

Spitfire Mk IIA, P7666, EB-Z, "Observer Corps", was built by Castle Bromwich, and delivered to 41 Squadron on 23 November 1940.

Elliptical wing design

In 1934, Mitchell and the design staff decided to use a semi-elliptical wing shape to solve two conflicting requirements; the wing needed to be thin, to avoid creating too much drag, while still able to house a retractable undercarriage, plus armament and ammunition. Mitchell has sometimes been accused of copying the wing shape of the Heinkel He 70, which first flew in 1932; but as Beverly Shenstone, the aerodynamicist on Mitchell's team, explained "Our wing was much thinner and had quite a different section to that of the Heinkel. In any case it would have been simply asking for trouble to have copied a wing shape from an aircraft designed for an entirely different purpose."

The wing section used was from the NACA 2200 series, which had been adapted to create a thickness-to-chord ratio of 13% at the root, reducing to 9.4% at the tip. A dihedral of six degrees was adopted to give increased lateral stability.

Another feature of the wing was its washout. The trailing edge of the wing twisted slightly upward along its span, the angle of incidence decreasing from +2° at its root to -½° at its tip. This caused the wing roots to stall before the tips, reducing tip-stall that could otherwise have resulted in a spin.

General characteristics

Crew: one pilot
Length: 29 ft 11 in (9.12 m)
Wingspan: 36 ft 10 in (11.23 m)
Height: 11 ft 5 in (3.86 m)
Wing area: 242.1 ft2 (22.48 m2)
Airfoil: NACA 2209.4(tip)
Empty weight: 5,065 lb (2,297 kg)
Loaded weight: 6,622 lb (3,000 kg)
Max. takeoff weight: 6,700 lb (3,039 kg)
Powerplant: 1 × Rolls-Royce Merlin 45 supercharged V12 engine,
1,470 hp (1,096 kW) at 9,250 ft (2,820 m)

Performance

Maximum speed: 370 mph, (322 kn, 595 km/h)
Combat radius: 410 nmi (470 mi, 760 km)
Ferry range: 991 nmi (1,135 mi, 1,827 km)
Service ceiling: 36,500 ft (11,125 m)
Rate of climb: 2,600 ft/min (13.2 m/s)
Wing loading: 27.35 lb/ft2 (133.5 kg/m2)
Power/mass: 0.22 hp/lb (0.36 kW/kg)

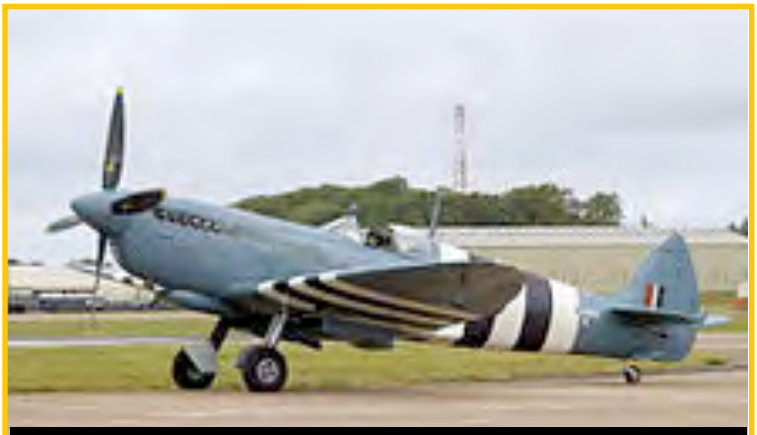
Armament

Guns: 2 x 20mm Hispano Mk II cannon;
60 rounds per gun: 4 x .303 in Browning Mk II* machine guns; 350 rpg.

Under the plan, on 12 July 1938, the Air Ministry bought a site consisting of farm fields and a sewage works next to Castle Bromwich Aerodrome in Birmingham. This shadow factory would supplement Supermarine's original factories in Southampton in building the Spitfire.

Although it would take some time to resolve the problems, in June 1940, 10 Mk IIs were built; 23 rolled out in July, 37 in August, and 56 in September. By the time production ended at Castle Bromwich in June 1945, a total of 12,129 Spitfires (921 Mk IIs, 4,489 Mk Vs, 5,665 Mk IXs, and 1,054 Mk XVIs) had been built. CBAF went on to become the largest and most successful plant of its type during the 1939–45 conflict. As the largest Spitfire factory in the UK, by producing a maximum of 320 aircraft per month, it built over half of the approximately 20,000 aircraft of this type.

Flight testing



This Spitfire PR Mk XI (PL965) was built at RAF Aldermaston in southern England

All production Spitfires were flight tested before delivery. During the Second World War, Jeffrey Quill was Vickers Supermarine's chief test pilot, in charge of flight-testing all aircraft types built by Vickers Supermarine; he also oversaw a group of 10 to 12 pilots responsible for testing all developmental and production Spitfires built by the company in the Southampton area. Quill had also devised the standard testing procedures which, with variations for specific aircraft designs, operated from 1938. Alex Henshaw, chief test pilot at Castle Bromwich from 1940, was placed in charge of testing all Spitfires built at that factory, coordinating a team of 25 pilots; he also assessed all Spitfire developments. Between 1940 and 1946, Henshaw flew a total of 2,360 Spitfires and Seafires, more than 10% of total production.

Henshaw wrote about flight testing Spitfires:

After a thorough pre-flight check I would take off and, once at circuit height, I would trim the aircraft and try to get her to fly straight and level with hands off the stick ... Once the trim was satisfactory I would take the Spitfire up in a full-throttle climb at 2,850 rpm to the rated altitude of one or both supercharger blowers. Then I would make a careful check of the power output from the engine, calibrated for height and temperature ... If all appeared satisfactory I would then put her into a dive at full power and 3,000 rpm, and trim her to fly hands and feet off at 460 mph IAS (Indicated Air Speed). Personally, I never cleared a Spitfire unless I had carried out a few aerobatic tests to determine how good or bad she was.

When the last Spitfire rolled out in February 1948, a total of 20,351 examples of all variants had been built, including two-seat trainers, with some Spitfires remaining in service well into the 1950s. The Spitfire was the only British fighter aircraft to be in continuous production before, during and after the Second World War.

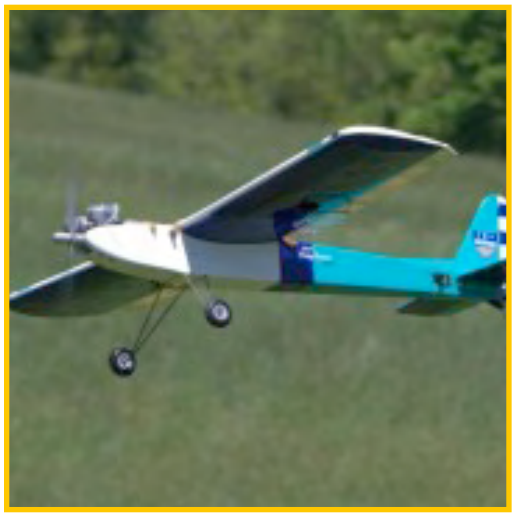
SMOKE SIGNALS

My thanks to Phil Friedensohn for sending this article to me, If you are like me you have no clue and only did some soldering if you were desperate. I think this article will give you a good starting point and a few "So that's how you do it."

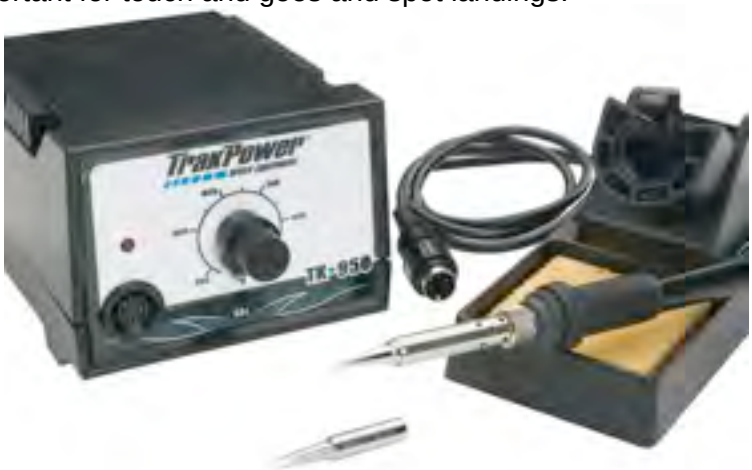
Model Airplane News / Electric Flight

Soldering Wire Landing Gear — The easy way!

by Gerry Yarrish - Jun 10, 2014



While building sport airplanes from kits, often the airplane will have landing gear made from formed and bent music wire that you will have to solder together. For Fun Fly airplanes like the Florio Flyer 60, the music wire are a little extra long to provide plenty of ground clearance for the propeller, very important for touch and goes and spot landings.



Soldering the gear seems difficult at first but it is very easy if you know the technique. Here's how I do it.

(Above) I do most of my heavy-duty soldering with a soldering station like this one from TrakPower, available from Hobbico. (hobbico.com) You can adjust the output and there are replaceable solder tips to use. Use the wide tip for fast heat transfer.

The biggest secret for strong solder joints is to use plenty of heat. This is best accomplished with a good quality soldering station. If you want to use a plain old hobby grade soldering iron/pen, the higher the wattage, the better. If you are having trouble getting the solder to flow into your joint, it's because the wire is drawing the heat away too quickly. You should use a 60 to 80 watt gun.

(Left) This soldering station from Radio Shack (20 to 40 watts,) is an excellent unit for basic electrical wire and connectors, but it does not supply enough heat for soldering wire landing gear. You need at least 60 to 80 watts. The more wattage the faster the parts will heat up making the solder flow easily into the joint.

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To produce strong heavy duty solder joints for wire landing gear, I use high silver content Stay Brite solder and liquid flux. Also, I used fine copper wire to bind the wire together and fine sandpaper to clean the areas where the solder joints will be made. Again a good high wattage soldering gun/iron should be used.

To keep the landing gear properly aligned, attach them to the mounting blocks on the fuselage with metal straps and glue. I like the metal straps available from Du-Bro Products.

Sand and clean the wires where the solder joint will be made, then wrap the joint area using thin brass wire . Keep the wraps tight and neat and apply several drops of the liquid flux to the joint area. Notice I just let the excess copper wire hang from the joint.

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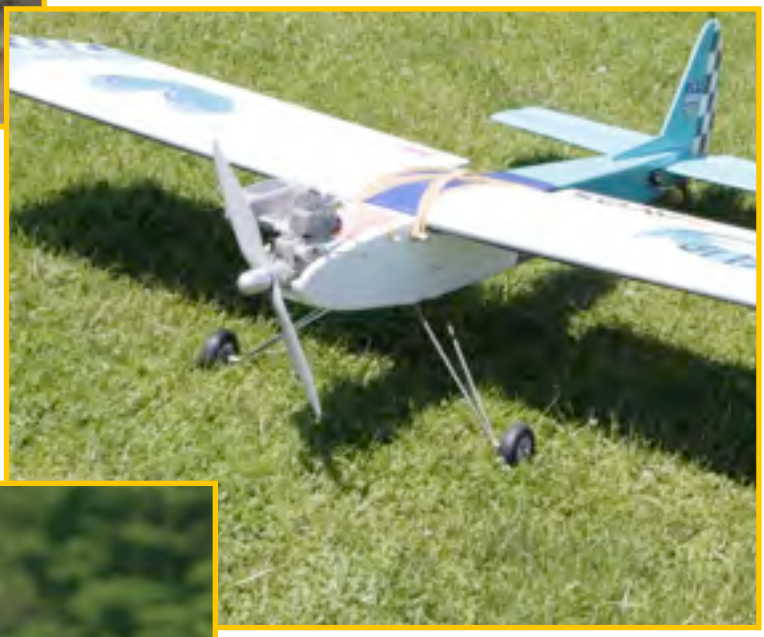
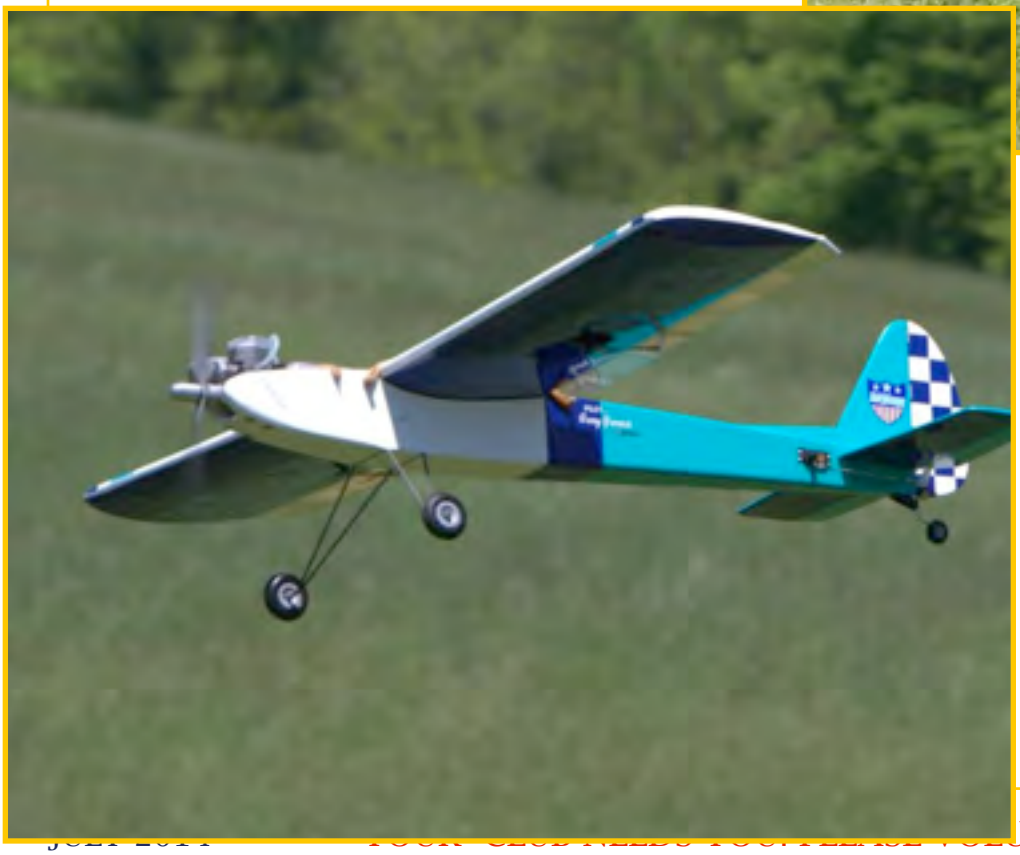
((Left)) A properly soldered joint will look smooth and shiny. If the solder joint is dull and rough, you did not use enough heat.
Apply the solder to the back side of the wrap that's away from the soldering iron and solder. Lightly touch the wrap with the tip of the solder and when it is hot enough, the solder will flow into the joint. Keep applying heat and feed in the solder to fill the voids of the joint. When the joint is filled remove the solder and the heat and let cool. When everything has cooled down, cut away the excess copper wire wrap and use a wire brush and some Acetone solvent to clean away the soldering flux. If you don't clean the solder joints they will eventually corrode and weaken the joint.



That's it. once your model is covered and finished, reattach the wire landing gear and install your wheels and lock collars.



This type of landing gear is very sturdy and will absorb a lot of abuse at the flying field. If you happen to bend the gear, they can be easily rebent back into shape. Should you break a solder joint, then you'll have a lot more to repair. It takes a lot of force to break a properly soldered set of landing gear.