

# The Aero Historian



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**Airfix 1/48 E.E. Lightning F.6**  
by Mark L. Rossmann

## **E. E. Lightning** by Mark L. Rossmann

The Lightning stemmed from a 1947 requirement for a fighter

capable of unprecedented performance. English Electric's design was so radical at the time that the Royal Aircraft Establishment took exception to some parts of it. They went so far

as to award Shorts with a contract to put together an aircraft to show EE just what parts of their design were wrong. So born was the SB.5, which  
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## TCAH Officers

**President**, Steve Jantscher

**Vice-President**, Steve Shaffer

**Secretary**, Bob Maderich

**Treasurer**, Dennis Strand

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## Newsletter Info

*Article Submission Deadline: 22nd of each month*

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## TCAH This Month

The monthly meeting will be held September 14, at Fleming Field, South St. Paul, beginning at 1:00 pm. Come early.

## Treasurer's Report

*by Dennis Strand*

Now that the club has come out of its' lock down, our financial activity has picked up quite a bit. Expenditures included some printing costs for club brochures as well as \$180.00 for several Nordic Con awards and a table rental. A motion was made and seconded to provide funds for a model of the CAF's B-25 "Miss Mitchell" as it appeared in 1958 as a TB-25Kradar crew trainer. This project is underway and was initiated by a request from the CAF Museum Officer.

Our income comprised of \$135.00 from 9 membership renewals as well as an \$8.00 donation by Noel Allard from the sale of kits at the August meeting. Thanks Noel. TCAH coffers now amount to \$4526.95.

September officially is the beginning of our annual membership drive. The dues are still a bargain at \$15.00. Catch me at the meeting or send a check to: Dennis Strand, 833 Manomin Ave., St. Paul, MN 55107 and join up for 2022.



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could have its wing sweep and tailplane position varied between flights. This first flew on the 2nd of December 1952 and by early 1954, the trials had confirmed EE's choice of low tailplane and mainplane sweep angle.

The first prototype, designated the P.1, took to the air on the 4th of August 1954, piloted by Roland Beaumont, EE's chief test pilot. Powered by Sapphire engines, on its third flight (on the 11th) it exceeded

Mach 1 in level flight, the first British aircraft to do so. Reheat (afterburner) had not been used; super cruise was here a long time before it became an American buzz word during their ATF program. The second prototype, the P.1A (a P.1. with twin 30mm cannon and later a bulged belly fuel tank), took to the air on the 18th of July 1955 and introduced the new aircraft to airshow-goers at that year's Farnborough show. The P.1s, while recognizably Lightning ancestors, had a number of differences in appearance. Most obviously, they had yet to receive a radar, and the nose intake was egg-shaped rather than round; looking like a basking shark's mouth. No ventral fuel tanks were fitted to start with and the vertical tail was substantially smaller.

The initial requirement did not actually specify Mach 2 performance, but EE had seen that it was possible and the American's F-104 program was also progressing towards Mach 2 performance. Roland Beaumont later stated that the Lightning's performance at Mach 2 was much superior to the F-104, with less noise and vibration and better controllability. A planned Double Scorpion rocket mounted in the rear of belly tank of the P.1B was cancelled as the aircraft's new Avon engines were found to give enough extra performance to render the rockets pointless. Besides, the space lost to the rocket and its fuel would have meant even less room for jet fuel, and the Lightning was short enough of that as it was.

Late 1959 saw the RAF finally getting their hands on some Lightnings to trial. The Lightning F.1 differed very little

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from the P.1B; the ventral fuel tank now had a small fin; the main vertical tail was enlarged and that was about it. It entered service with 74 squadron at Coltishall in 1960, and the F.1A followed on, entering service with 56 and 111 squadrons at Wattisham. The only difference of note was that the F.1A had attachment points for an in-flight refueling probe - the Lightning's limited fuel capacity meant that interception missions were almost limited to the area of the airfield otherwise!

The F.6 was the definitive Lightning variant; a much larger ventral fuel tank, with twin ventral fins. Cannon armament was back along with a larger, more efficient wing with kinked and cambered leading edges. These modifications were also applied to some F.2 airframes, which then became known as F.2As. These were equivalent to an F.6 apart from not having Red Top capability. Some F.3s were also converted to F.6 standard, lacking only the over wing tanks and being briefly known as F.3As in the process, before being fully converted to full F.6 standard.

Export versions (for Kuwait and Saudi Arabia) were also produced; five F.52s for Saudi Arabia (basically F.2s) and then there was the F.53 which was basically an F.6 with additional air-to-ground capability in the form of rocket pods and bombs on underwing and over wing pylons. Two T.54 (T.4s) were built for Saudi Arabia followed by the T.55, which was a super-T.5 - it had the large ventral fuel tank and enlarged wings of the F.6, while the RAF's T.5s only had the small ventral fuel tanks and straight wings of earlier variants. F.53s and T.55s for Kuwait were given a K suffix but differed little from the Saudi

versions.

When the Lightning was introduced into RAF service, pilots were delighted with the new fighter and had no problems converting from lower performance aircraft such as the Hunter. However, ground crew were not as happy. The Lightning was a much more complex beast than previous aircraft, and maintainer training and RAF engineering support had not caught up with this fact. In later years when this situation was rectified, Lightning serviceability was much streamlined.

After thirteen years of service (three years after retirement had been expected), the RAF had decided that the Phantom would take over the primary air defense role and the draw-down of the Navy's carrier force, it was no reflection on the Lightning's performance (though its lack of range meant the Phantom's medium range capabilities would be very useful). The Lightning was still a formidable opponent; even high-flying U-2 pilots became accustomed to being caught by Lightnings! Lightnings would be kept on in limited numbers, however, and a program of modifications was carried out to strengthen them for the extra years of flying that lay ahead.

Lightning squadrons challenged other squadrons to races to high altitude. Having beaten the mighty F-15 Eagle to 30,000 feet (just - with a somewhat stripped-down T.5!), their come-uppance came in a challenge with a Harrier squadron. While the Lightning made the long journey to the runway from the hangar, the Harrier pilot simply did a vertical take-off and was at 10,000 feet before the Lightning had even begun its take-off roll! Revenge

of a sort came when one lucky Lightning pilot got the chance to shoot down a Harrier - for real. The Harrier's pilot had ejected but afterwards the Harrier just kept on flying and rather than risk it crashing in an unknown area, it was shot down.

The Lightning force draw-down began in 1974; the first Jaguars were being delivered, freeing Phantoms for pure air-defense. By early 1977, only 5 and 11 squadrons still operated Lightnings. By now, the natural metal finish of Lightnings had mostly disappeared - green upper surfaces were the norm for German-based aircraft which spent much of their time at low level where the silver finish was too conspicuous. Later the normal grey and green scheme was applied to match other Strike Command aircraft; but this was very much a low level/on the ground scheme and showed up far too much at high altitudes. In the early 1980s, it was realized once more than Lightnings still had some use; the Tornado ADV was late in arriving, so the Lightnings once again underwent testing to see if they could continue flying safely. They could, and did, though reserve and active aircraft underwent constant rotation to even out the usage of each airframe. Soon, a variety of different grey schemes were to be seen, to the point where it seemed no two aircraft had the same paint scheme.

In June 1988 the last Lightning in RAF service took off for the final time, destined for a private buyer. Service with the RAF had lasted from 1960 until 1988; not bad for an aircraft that had been planned to have a service life of no more than ten years! Had it not been for the lack of fatigue life on the

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remaining fleet, a few more years of service could have been had; the hasty scrapping of many early marks in the 1970s was certainly a mistake!

While in RAF service, the Lightning never fired a shot in anger (unless you count that Harrier!), It was possibly one of the most aggressive looking

aircraft ever to fly, and was certainly the backbone of the air defense of Great Britain for many years. The epitome of British fighter design - short on fuel but immensely powerful and maneuverable and with more character than any of its contemporaries - the Lightning was the first, and last, all-British supersonic fighter. While the Lightning's replacements (the

Phantom and Tornado ADV in British service, the F-15 Eagle in Saudi service) are excellent aircraft in their own right, none compare with the sheer brute force and sparkling performance of the ultimate jet sports car - the English Electric Lightning.

#### **Model**

Back in 2016, I bought this

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at our annual IPMS club auction. As with 4 other models, I bought from this modeler, they were built and almost done. I can't give an overall review of how this kit went together, but it was well built, nicely sanded with an excellent interior cockpit done by him.

I did paint, decal, build the Red Top AAMs, added the landing gear, pitot tube and the little exterior parts, this appears to be a 4-star kit.

**Paint:**

Tamiya Synthetic Spray:

- AS-9 Dark Green (RAF)
- AS-10 Ocean Grey (RAF)
- TS -17 Gloss Aluminum

**Kit Decals:**

- **English Electric F2A** Flown by Wing Commander J.B. Mitchell, C.O. 92 Squadron RAF Germany, Gutersloh, August 1972

- **English Electric Lightning F6, No 11 Squadron**, Royal Air Force Binbrook, Lincolnshire, England 1978

- **English Electric Lightning F6, No 5 Squadron**, Royal Air Force Binbrook, Lincolnshire, England 1987

Model used No. 11 Squadron Decals. However, the orange bands for the wingtips and tail all disintegrated, I did not replace them. No problems with the rest of the decals.

**Sources:**

1. AIRFIX Instruction sheet.
2. Wikipedia.
3. Military Aircraft Markings and Profiles – Barry C. Wheeler
4. Thunder and Lightning

Web Site:

<https://www.thunder-and-lightnings.co.uk/lightning/history.php>



## Directions to the Club Meeting Location

**Where: South St. Paul Municipal Airport, a.k.a. Fleming Field**, located on the southern extremity of South St. Paul, south of 1-494, west of Concord Street and East of Highway 52.

### If coming from the western Twin Cities going east on 494:

- Exit at the 7th and 5th Avenue exit (Exit No.65)
- Turn right (South) on 7th Ave and go approximately .6 miles to a 4-way Stop sign. This is South Street W. To your left there will be a McDonald's; to your right front there will be a Walgreen's.
- Turn left (East) at the 4-way Stop onto
- South Street W and go approximately .6 miles. Along the way you will encounter three more Stop signs—the third Stop sign (Henry Avenue) will be a "T" intersection. At the "T" intersection on your left will be homes and on your right softball fields.
- Turn right (south) onto Henry Ave. and go approximately .2

- miles toward the Fleming Field airport terminal building.

### If coming from east Twin Cities on westbound 494:

- Exit at the 7th and 5th Avenue exit (Exit No.65)
- Turn left (South) on 7th Ave and go approximately .6 miles to a 4-way Stop sign. This is South Street W. To your left front there will be a small strip mall; to your right there will be an Amoco station.
- Turn left (East) at the 4-way Stop onto
- South Street W and go approximately .4 miles. Along the way you will encounter two more Stop signs—the third Stop sign (Henry Avenue) will be a "T" intersection. At the "T" intersection on your left will be homes and on your right softball fields.
- Turn right (south) onto Henry Ave. and go approximately .2 miles toward the Fleming Field airport terminal building

The terminal is on the right with parking available.



The Aero Historian is published monthly by the Twin City Aero Historians, Inc., a joint chapter of the American Aviation Historical Society and International Plastic Modelers Society/USA, for members and readers as part of their annual dues or fees.

The group is open to aviation enthusiasts from teenagers on up who are interested in aviation modeling, photography, collecting, art and writing.

The Twin Cities Aero Historians (TCAH) meet the second Saturday of every month at 1:00pm.

See above for the new meeting locations and directions.

Mail Newsletter material to the editor and address changes to the treasurer.

