AMA #1256
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Volume 40 Issue 6-7-8-9

JUNE/JULY/AUGUST/SEPTEMBER 2013

UNOFFICIAL MAY MEETING MINUTES

There was no meeting held in May due to inclement weather at the flying site both dates…

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UNOFFICIAL JUNE MEETING MINUTES

There was no meeting held in June. No reason cited.

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JULY/AUGUST MEETING MINUTES

FYI: We DO NOT hold meetings during the months of July and August.

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MAY'S MYSTERY AIRCRAFT

de Havilland Mosquito

The de Havilland DH.98 Mosquito was a British multi-role combat aircraft with a two-man crew that served during the Second World War and the postwar era. The Mosquito was one of the few operational front-line aircraft of the World War II era to be constructed almost entirely of wood and, as such, was nicknamed "The Wooden Wonder". The Mosquito was also known affectionately as the "Mossie" to its crews Originally conceived as an unarmed fast bomber; the Mosquito was adapted to many other roles during the air war, including low- to medium-altitude daytime tactical bomber, high-altitude night bomber, pathfinder, day or night fighter, fighter-bomber, intruder, maritime strike aircraft, and fast photo-reconnaissance aircraft. It was also used by the British Overseas Airways Corporation (BOAC) as a transport

MAY'S MYSTERY AIRCRAFT continued…

When the Mosquito entered production in 1941, it was one of the fastest operational aircraft in the world. Entering widespread service in 1942, the Mosquito first operated as a high-speed, high-altitude photo-reconnaissance aircraft, and continued to operate in this role throughout the war. From mid-1942 to mid-1943 Mosquito bombers were used in high-speed, medium- or low-altitude missions, attacking factories, railways and other pinpoint targets within Germany and German-occupied Europe. From late 1943, Mosquito bomber units were formed into the Light Night Strike Force and used as pathfinders for RAF Bomber Command's heavy-bomber raids. They were also used as "nuisance" bombers, often dropping 4,000 lb (1,812 kg) "cookies", in high-altitude, high-speed raids that German night fighters were almost powerless to intercept.

As a night fighter, from mid-1942, the Mosquito was used to intercept Luftwaffe raids on the United Kingdom, most notably defeating the German aerial offensive, Operation Steinbock, in 1944. Offensively, starting in July 1942, some Mosquito night-fighter units conducted intruder raids over Luftwaffe airfields and, as part of 100 Group, the Mosquito was used as a night fighter and intruder in support of RAF Bomber Command's heavy bombers, and played an important role in reducing bomber losses during 1944 and 1945. As a fighter-bomber in the Second Tactical Air Force, the Mosquito took part in "special raids", such as the attack on Amiens Prison in early 1944, and in other precision attacks against Gestapo or German intelligence and security forces. Second Tactical Air Force Mosquitoes also played an important role operating in tactical support of the British Army during the 1944 Normandy Campaign. From 1943 Mosquitoes were used by RAF Coastal Command strike squadrons, attacking Kriegsmarine U-boats (particularly in the 1943 Bay of Biscay offensive, where significant numbers of U-boats were sunk or damaged) and intercepting transport ship concentrations.

The Mosquito saw service with the Royal Air Force (RAF) and many other air forces in the European theatre, and the Mediterranean and Italian theatres. The Mosquito was also used by the RAF in the South East Asian theatre, and by the Royal Australian Air Force (RAAF) based in the Halmaheras and Borneo during the Pacific War.

Development

See website for continued write-up on this subject…

MAY'S MYSTERY AIRCRAFT continued…

Design Overview

The Mosquito was a fast, twin-engined aircraft with shoulder-mounted wings. The most produced variant, designated the FB Mk VI (Fighter-bomber Mark 6), was powered by two Merlin Mk 23 or Mk 25 engines driving three-bladed de Havilland hydromatic propellers. The typical fixed armament for an FB Mk VI was four Browning .303 machine guns and four 20 mm Hispano cannon while the offensive load consisted of up to 2,000 pounds (910 kg) of bombs, or eight RP-3 unguided rockets.

Construction

The oval-section fuselage was a frameless monocoque shell built in two halves being formed to shape by band clamps over a mahogany or concrete mould, each holding one half of the fuselage, split vertically. The shell halves were made of sheets of Ecuadorean balsawood sandwiched between sheets of Canadian birch, but in areas needing extra strength—such as along cut-outs— stronger woods replaced the balsa filler; the overall thickness of the birch and balsa sandwich skin was only 7⁄16 inches (11 mm). This sandwich skin was so stiff that no internal reinforcement was necessary from the wing's rear spar to the tail bearing bulkhead. The join was along the vertical centre line. This split construction greatly aided the assembly of the internal equipment as it allowed the technicians easy access to the fuselage interior. While the glue in the plywood skin dried, carpenters cut a sawtooth joint into the edges of the fuselage shells, while other workers installed the controls and cabling on the inside wall. When the glue completely dried, the two halves were glued and screwed together. The fuselage was strengthened internally by seven bulkheads made up of two plywood skins parted by spruce blocks, which formed the basis on each half for the outer shell. Each bulkhead was a repeat of the spruce design for the fuselage halves; a balsa sheet sandwich between two plywood sheets/skins. Bulkhead number seven carried the fittings and loads for the tailplane and rudder; The type of glue originally used was Casein resin, which was later replaced by "Aerolite", a synthetic urea-formaldehyde, which was more durable. Many other types of screws and flanges (made of various woods) also held the structure together.

The fuselage construction joints were made from balsa wood and plywood strips with the spruce multi-ply being connected by a balsa V joint, along with the interior frame. The spruce would be reinforced by plywood strips at the point where the two halves joined to form the V-joint. Located on top of the joint the plywood formed the outer skin. During the joining of the two halves ("boxing up"), two laminated wooden clamps would be used in the after portion of the fuselage to act as support. A covering of doped Madapolam fine plain woven cotton) fabric was stretched tightly over the shell and a coat of silver dope was applied, after which the exterior camouflage was applied. The fuselage had a large ventral section cut-out, which was braced during construction, to allow it to be lowered onto the wing centre-section. Once the wing was secured the lower panels were replaced, and the bomb bay or armament doors fitted.

The all-wood wing was built as a one-piece structure and was not divided into separate construction sections. It was made up of two main spars, spruce and plywood compression ribs, stringers, and a plywood covering. The outer plywood

MAY'S MYSTERY AIRCRAFT continued…

skin was covered and doped like the fuselage. The wing was installed into the roots by means of four large attachment points. The engine radiators were fitted in the inner wing, just outboard of the fuselage on either side. These gave less drag. The radiators themselves were split into three sections: an oil cooler section outboard, the middle section forming the coolant radiator and the inboard section serving the cabin heater. The wing contained metal framed and skinned ailerons, but the flaps were made of wood and were hydraulically controlled. The nacelles were mostly wood, although, for strength, the engine mounts were all metal as were the undercarriage parts. Engine mounts of welded steel tube were added, along with simple landing gear oleos filled with rubber blocks. Wood was used to carry only in-plane loads, with metal fittings used for all triaxially loaded components such as landing gear, engine mounts, control surface mounting brackets, and the wing-to-fuselage junction. The outer leading wing edge had to be brought 22 inches (56 cm) further forward to accommodate this design. The main tail unit was all wood built. The control surfaces, the rudder and elevator were aluminum framed and fabric covered. The total weight of metal castings and forgings used in the aircraft was only 280 lb (130 kg).

In November 1944, several crashes occurred in the Far East. At first, it was thought these were as a result of wing structure failures. The casein glue, it was said, cracked when exposed to extreme heat and/or monsoon conditions. This caused the upper surfaces to "lift" from the main spar. An investigating team led by Major Hereward de Havilland travelled to India and produced a report in early December 1944 stating that "the accidents were not caused by the deterioration of the glue but by shrinkage of the airframe during the wet monsoon season". However a later inquiry by Cabot & Myers definitely attributed the accidents to faulty manufacture and this was confirmed by a further investigation team by the Ministry of Aircraft Production at Defford which found faults in six different Marks of Mosquito (all built at de Havilland's Hatfield and Leavesden plants) which showed similar defects, and none of the aircraft had been exposed to monsoon conditions or termite attack; thus it was concluded that there were construction defects found at the two plants. It was found that the "Standard of gluing...left much to be desired". Records at the time showed that accidents caused by "loss of control" were three times more frequent on Mosquitoes that on any other type of aircraft. The Air Ministry forestalled any loss of confidence in the Mosquito by holding to Major de Havilland's initial investigation in India that the accidents were caused "largely by climate"

To solve the problem, a sheet of plywood was set along the span of the wing to seal the entire length of the skin joint along the main spar.

Systems

The fuel systems allowed the Mosquito to have a good range and endurance, using up to nine fuel tanks. Two outer wing tanks each contained 58 imperial gallons (260 L) of fuel. These were complemented by two inner wing fuel tanks, each containing 143 imperial gallons (650 L), located between the wing root and engine nacelle. In the central fuselage were twin 25 imperial gallons (110 L) fuel tanks mounted between bulkhead number two and three aft of the cockpit. Both the

MAY'S MYSTERY AIRCRAFT continued…

inner wing, and fuselage tanks are listed as the "main tanks" and the total internal fuel load of 452 imp gal (2,050 l) was initially deemed appropriate for the type. In addition, the FB Mk VI could have larger fuselage tanks, increasing the capacity to 63 imperial gallons (290 L). Drop tanks of 50 imperial gallons (230 L) or 100 imperial gallons (450 l) could be mounted under each wing, increasing the total fuel load to 615 or 715 imperial gallons (2,800 or 3,250 L).

In order to reduce fuel vaporization at the high altitudes at which the photographic reconnaissance variants flew, the central and inner wing tanks were pressurized. The pressure venting cock located behind the pilot's seat controlled the pressure valve; as the altitude increased, the valve increased the volume applied by a pump. This system was extended to include field modifications of the fuel tank system. The engine oil tanks were in the engine nacelles. Each nacelle contained a 15 imperial gallons (68 l) oil tank, including a 2.5 imp gal (11 l) air space. The oil tanks themselves had no separate coolant controlling systems. The coolant header tank was in the forward nacelle, behind the propeller. The remaining coolant systems were controlled by the coolant radiators shutters in the forward inner wing compartment, between the nacelle and the fuselage and behind the main engine cooling radiators which were fitted in the leading edge. Electric-pneumatic operated radiator shutters directed and controlled airflow through the ducts and into the coolant valves, to predetermined temperatures.

Electrical power came from a 24 volt DC generator on the starboard (No. 2) engine and an alternator on the port engine which supplied AC power for radios. The radio shutters, superchargers, gun camera, bomb bay, bomb/rocket release and all the other crew controlled instruments were powered by a 24 volt battery. The radio communication devices included VHF and HF communications, GEE navigation, and IFF and G.P. devices. The electric generators also powered the fire extinguishers. Located on the starboard side of the cockpit, the switches would operate automatically in the event of a crash. In flight, a warning light would flash to indicate a fire, should the pilot not already be aware of it. In later models, to save liquids and engine clean up time in case of belly landing, the fire extinguisher was changed to semi-automatic triggers.

The design of the Mark VI allowed for a provisional long-range fuel tank to increase range for action over enemy territory, for the installation of bomb release equipment specific for depth charges for strikes against enemy shipping, or for the simultaneous use of rocket projectiles along with a 100 imperial gallons (450 L) drop tank under each wing supplementing the main fuel cells. The FB.VI had a wingspan of 54 feet 2 inches (16.51 m), a length (over guns) of 41 feet 2 inches (12.55 m). It had a maximum speed of 378 miles per hour (608 km/h) at 13,200 feet (4,000 m). Maximum take-off weight was 22,300 pounds (10,100 kg) and the range of the aircraft was 1,120 miles (1,800 km) with a service ceiling of 26,000 feet (7,900 m).

The main landing gear was housed in the nacelles behind the engines. These were raised and lowered hydraulically. The main landing gear shock absorbers were de Havilland manufactured and used a system of rubber in compression, rather than hydraulic oleos, with twin pneumatic

MAY'S MYSTERY AIRCRAFT continued…

brakes for each wheel. The Dunlop-Marstrand anti-shimmy tailwheel was retractable.

Flight characteristics

The design was noted for having light and effective control surfaces which allowed for good maneuverability. It was noted that the rudder should not be used aggressively at high speeds, and the poor aileron control at low speeds when landing and taking off was also a problem for inexperienced crews. For flying at low speeds, the flaps had to be set at 15°, speed reduced to 201 miles per hour (323 km/h) and rpm set to 2,650. The speed could be reduced to an acceptable 150 miles per hour (240 km/h) for low speed flying. For cruising the maximum speed for obtaining maximum range was 200 miles per hour (320 km/h) at 17,000 lb (7,700 kg) weight.

The Mosquito had a low stall speed of 121 miles per hour (195 km/h) with undercarriage and flaps raised. When both were lowered, the stall speed decreased to 100–120 miles per hour (160–190 km/h). Stall speed at normal approach angle and conditions was 100–109 miles per hour (160–175 km/h). Warning of the stall was given by buffeting and would occur 12 miles per hour (19 km/h) before stall was reached. The conditions and impact of the stall were not severe. The wing did not drop unless the control column was pulled back. The nose drooped gently and recovery was easy.

Operational history

See website for continued write-up on this subject…

Variants

See website for continued write-up on this subject…

General characteristics

Crew: 2: pilot, bombardier/navigator
Length: 44 ft 6 in (13.57 m)
Wingspan: 54 ft 2 in (16.52 m)
Height: 17 ft 5 in (5.3 m)

MAY'S MYSTERY AIRCRAFT continued…

Wing area: 454 ft2 (42.18 m2)
Empty weight: 14,300 lb (6,490 kg)
Loaded weight: 18,100 lb (8,210 kg)
Max. takeoff weight: 25,000 lb (11,000 kg)
Powerplant: 2 × Rolls-Royce Merlin 76/77 (left/right) liquid-cooled V12 engine, 1,710 hp (1,280 kW) each

Performance

Maximum speed: 361 kn (415 mph (668 km/h)) at 28,000 ft (8,500 m)
Range: 1,300 nmi (1,500 mi (2,400 km)) with full weapons load
Service ceiling: 37,000 ft (11,000 m)
Rate of climb: 2,850 ft/min (14.5 m/s)
Wing loading: 39.9 lb/ft2 (195 kg/m2)
Power/mass: 0.189 hp/lb (311 W/kg)

Armament

Bombs: 4,000 pounds (1,800 kg)

Avionics

GEE radio-navigation

Source: http://en.wikipedia.org/wiki/De_Havilland_Mosquito

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AREA EVENTS

The events listed, as well as others, can be found at your AMA's Contest Calendar Site on the WWW: go to URL: http://www.modelaircraft.org/events/calendar.aspx or the IMAA site at http://www.fly-imaa.org/imaa/events/index.html Others listed are from club newsletters or flyers

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9/14/2013 - 9/15/2013 -- Bowie, MD (A) ANNUAL PGRC BIG BIRD WARBIRD FLY IN.

Site: Club Field. Richard Moreland CD PH: 301/261-7366 Email: rmoreland1@verizon.net. Visit: www.pgrcclub.com. 400 foot paved runway plus 800' foot grass strip. On field camping allowed. No facilities. $10 landing fee.
Sponsor: PRINCE GEORGES RC CLUB

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9/21/2013 - 9/22/2013 -- Quakertown, PA (C-Restricted) HAROLD WEIL MEMORIAL GIANT SCALE FLY IN.

Site: Buc Le Memorial Flying Field. Travis Moyer CD PH: 215.529.6088 Email: tsmdmm@comcast.net. Visit: www.buc-le.org. The Buc Le Aero sportsmen Jon P Fritzges Memorial flying field is a 1000ftx250ft smooth grass runway. Plenty of primitive RV parking. Huge open flying site. Come for a weekend full of fun, good friends and great flying. Food concession. Hotel lodging nearby. No Landing fee. Any size airplane allowed to fly after 12 noon Sunday. Please visit our website for additional information.
Sponsor: BUC-LE AERO SPORTSMEN

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AREA EVENTS

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9/28/2013 -- 13TH ANNUAL RC SWAP MEET.

Site: Kutztown Fairgrounds. Ernest Jones CD PH: 610.530.2076 Email: flygramps@hotmail.com. Set up-8am, doors open 9am-2pm. Kutztown Fairgrounds Main Gate #1 145-205 North Whiteoak St. General Admission- $4 per person. 8' Vending tables-$11 each. Registration- Send S.A.S.E with check or money order payable to K.A.R.C.S include your name and phone number to; Ernie Jones 4913 Steeplechase Dr Macungie, PA 18062. For additional information Contact- Dan Joy 610-926-2522.
Sponsor: KUTZTOWN AERODROME RC SQUADRON

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10/3/2013 - 10/6/2013 -- Hamburg, PA 2013 HAMBURG JET JAMBOREE.

Site: Fairview RC Flyers. James Ellis CD PH: 610-965-5766 Email: racerxx@ptd.net. Visit: www.fairvewflyers.net. 4 days of RC Jet flying! 1800ftx400ft rolled grass runway. Campers welcome, no hook ups. Saturday eve. banquet and awards presentation. Flying everyday from 9am til 5pm. 2.4GHz only.
Sponsor: FARVIEW R/C FLYERS

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10/4/2013 - 10/6/2013 -- Birdsboro, PA END OF THE SEASON EASTERN SORAING LEAGUE.

Site: 400 Daniel Boone Rd. Steven Lucke CD PH: 973-455-7200 Email: stlu12@aol.com. Unlimited Thermal duration soaring contest.. The last TD contest of the year for the Eastern soaring league.
Sponsor: NORTH JERSEY SOARING SOCIETY

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10/12/2013 - 10/13/2013 -- Gettysburg, PA KORNASKI CHILI FLY IN.

Site: Club Field. Jeff Black CD PH: 717/965-5634 Email: jr.black@comcast.net. Visit: WWW.BLUEGRAYRC.COM. Pilot sign in will be at 9am on Saturday. Flying both days will be from 10am til 5pm. Concession stand will be open from 11am til 2pm both days. All type aircraft welcome. 800'x100' grass runway. All AMA and club rules will be followed. Primitive camping allowed no hook ups.
Sponsor: BLUE & GRAY MINIATURE AIRCRAFT

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10/12/2013 -- Oxford, PA (C) OCTOBERFEST FUN FLY AND VINTAGE RALLY.

Site: 160 Cream Rd. Mike Denest CD PH: 302-234-9597 Email: mjd12k@yahoo.com. Visit: www.cloudkingsrc.org. Fun fly open to all RC models featuring planes eligible for V/RCS and SAM. Awards for VR/CS Concours planes per 2013 requirement and best SAM RC assist antique. Pilots choice and people's choice awards. Rudder only competition flown per VR/CS pattern.
Sponsor: CLOUD KINGS RC CLUB

Until next month,

Tim Mihalski, Editor

My E-Mail Address:
MIHALSKI@COMCAST.NET

JUNE/JULY/AUGUST/SEPTEMBER'S MYSTERY AIRCRAFT

A mystery aircraft for you to ponder… you can read all about this mystery ship in the October issue of ***Contact…***

IMPORTANT REMINDERS...

Saturday 10:00 A.M. 09/14/13 Club Picnic-Chair: Ron Becker
Saturday 11:00 A.M. 09/14/13 Club Meeting at Field (weather permitting)
Saturday 10:00 A.M. 09/21/13 Club Picnic/Meeting (Raindate)-Chair: Ron Becker

Monday 07:30 P.M. 10/21/13 Club Meeting @ Stahl American Legion Post
Nominations of 2014 Club Officers

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