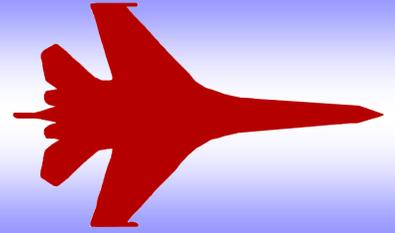


TRAC News



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October 2023 Issue

President's Comments

Warbird Event October 14

Check out the Flyer for the Warbird Event

November Election of Officers

Anyone interested in serving as a club officer is invited to submit a short bio for publication in the November newsletter, ahead of the annual November election of club officers. As of this publication, there have been none submitted. I have confirmed with the current Officers and Board members that they would serve another term if unopposed.

September Work Day

We will be having a work day Saturday, September 30, ahead of the Warbird event. Cleaning and tidying up will be the main focus. We will try to get an email out to the membership with a list of tasks that we would like to see done.

Thanksgiving Open House

Our annual Thanksgiving Open House and pot luck luncheon will be November 18. We burn hot dogs and burgers, supply the drinks. You bring a dish to share. A \$5 donation gets a great lunch. Cash donations will be accepted and taken to Metropolitan Ministries, along with a \$300 donation from the club.

FAA Remote ID Update

If you've been keeping up with the FAA's remote ID rule, you won't be surprised that enforcement of this rule has been delayed for 6 months due to the FAA not being able to process all of the applications for FRIA status timely. Another aspect of this delay is to provide manufacturers more time to supply the remote ID equipment that some may need if not operating at a FRIA site.

Safe Flying

Don Riek

Upcoming Events

TRAC - Club Meeting at Field, Saturday, October 7, at 11:00AM

TRAC - Warbird Meet at Field, Saturday October 14, at 08:00AM

TRAC - Club Meeting at Field, Saturday, November 11, at 11:00AM

TRAC - Open House at Field, Saturday November 18, at 08:00AM

TRAC - Club Meeting at Field, Saturday, December 9, at 11:00AM

TRAC MINUTES

September 9, 2023

Meeting Call to Order

Meeting called to order by Pres. Don Riek at 11:00 a.m. with 33 signed-in members present.

Motion to accept minutes of last meeting was made, seconded, and passed.

Treasury Report

James Chambers presented a detailed treasury report and break down of expenses.

Beginning Balance	\$ XXXX
Income	\$ 985.22
Expenses	\$ 786.21
Closing Balance	\$ XXXX
Runway Fund	\$ 3799.00

Motion to accept the Treasurer's Report was made, seconded, and passed.

New Members/New Pilots

Collin Boule

Safety block

Please be aware of the possibility of wasps under the flight tables and the shelter. Wasp spray is located in the milk crate hanging next to the refrigerator. If you are allergic to bees and you use an epipen please let someone know where you keep it in case you get stung.

Old Business

1) Warbird event set for October 14. Update from Vince? The October TRAC meeting will be held the week prior which would be October 7.

2) Ray Baker not able to remove old trailer, we will need a plan B so if you have any suggestions please let one of the officers know.

3) We would like to plan a workday on September 30th to cleanup right before the warbird meet.

New Business

1) Comments on the new TRAC welcome sign right at the entrance of the main gate.

2) We will be adding new signage in the parking lot and designating areas for people that are flying and people that are spectating

3) Extra link was added to the gate to hopefully make it easier to unlock and lock the gate. We also discussed a new mechanism to hopefully stop the county from locking us out.

4) Antone interested in serving as a club officer is invited to submit a short bio for publication in the October newsletter, ahead of the annual November election of club officers.

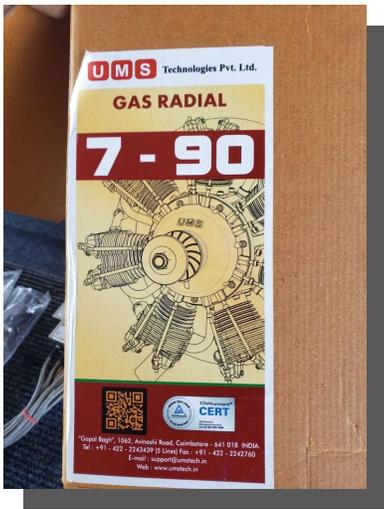
5) Our annual Thanksgiving Open House and pot luck luncheon will be November 18. We will have hot dogs and hamburgers, and supply drinks. You will need to bring a dish to share. A \$5 donation gets you a great lunch. Cash donations will be accepted and taken to Metropolitan Ministries, along with a \$300 dollar donation from the club.

6) It was discussed to amend the flying hours to allow for some night flying, we will update this when we have further information.

Show-and-Tell: Frank brought out his new UMS 7 cylinder radial gas engine for all to see, it really is a marvelous piece of engineering.

Adjournment 11:46 am

Frank's radial motor.



Don and Ivan building the charging stations.



Nice plane with a nice price tag.



Kenny with his P-47



Junkers Ju 87 Stuka



The **Junkers Ju 87** or **Stuka** (from *Sturzkampfflugzeug*, "dive bomber") is a German dive bomber and ground-attack aircraft. Designed by Hermann Pohlmann, it first flew in 1935. The Ju 87 made its combat debut in 1937 with the Luftwaffe's Condor Legion during the Spanish Civil War of 1936–1939 and served the Axis in World War II from beginning to end (1939–1945).

The aircraft is easily recognisable by its inverted gull wings and fixed spatted undercarriage. Upon the leading edges of its faired main gear legs were mounted ram-air sirens known as Jericho trumpets [de], which became a propaganda symbol of German air power and of the so-called Blitzkrieg victories of 1939–

1942, as well as providing Stuka pilots with audible feedback as to speed.

The Ju 87 operated with considerable success in close air support and anti-shipping roles at the outbreak of World War II. It led air assaults in the invasion of Poland in September 1939. Stukas proved critical to the rapid conquest of Norway, the Netherlands, Belgium and France in 1940. Though sturdy, accurate, and very effective against ground targets, the Stuka was, like many other dive bombers of the period, vulnerable to fighter aircraft. During the Battle of Britain of 1940–1941, its lack of manoeuvrability, speed and defensive armament meant that it required a heavy fighter escort to operate effectively.

The Ju 87 was a single-engined all-metal cantilever monoplane. It had a fixed undercarriage and could carry a two-person crew. The main construction material was duralumin, and the external coverings were made of duralumin sheeting. Parts that were required to be of strong construction, such as the wing flaps, were made of Pantal (a German aluminium alloy containing titanium as a hardening element) and its components made of Elektron. Bolts and parts that were required to take heavy stress were made of steel.^[21]

The Ju 87 was fitted with detachable hatches and removable coverings to aid and ease maintenance and overhaul. The designers avoided welding parts wherever possible, preferring moulded and cast parts instead. Large airframe segments were interchangeable as a complete unit, which increased speed of repair.^[21]

The airframe was also subdivided into sections to allow transport by road or rail. The wings were of standard Junkers double-wing construction. This gave the Ju 87 considerable advantage on take-off; even at a shallow angle, large lift forces were created through the aerofoil, reducing take-off and landing runs.^[21]

In accordance with the Aircraft Certification Centre for "Stress Group 5", the Ju 87 had reached the acceptable structural strength requirements for a dive bomber. It was able to withstand diving speeds of 600 km/h (370 mph) and a maximum level speed of 340 km/h (210 mph) near ground level, and a flying weight of 4,300 kg (9,500 lb). Performance in the diving attack was enhanced by the introduction of dive brakes under each wing, which allowed the Ju 87 to maintain a constant speed and allow the pilot to steady his aim. It also prevented the crew from suffering extreme g forces and high acceleration during "pull-out" from the dive.^[21]

The fuselage had an oval cross-section and housed, in most examples, a Junkers Jumo 211 water-cooled inverted V-12 engine. The cockpit was protected from the engine by a firewall ahead of the wing centre section where the fuel tanks were located. At the rear of the cockpit, the bulkhead was covered by a canvas cover which could be breached by the crew in an emergency, enabling them to escape into the main fuselage. The canopy was split into two sections and joined by a strong welded steel frame. The canopy itself was made of Plexiglas and each compartment had its own "sliding hood" for the two crew members.^[21]

The offensive armament was two 7.92 mm (.312 in) MG 17 machine guns fitted one in each wing outboard of undercarriage, operated by a mechanical pneumatics system from the pilot's control column. The rear gunner/radio operator operated one 7.92 mm (.312 in) MG 15 machine gun for defensive purposes.^[21]

The engine and propeller had automatic controls, and an auto-trimmer made the aircraft tail-heavy as the pilot rolled over into his dive, lining up red lines at 60°, 75° or 80° on the cockpit side window with the horizon and aiming at the target with the sight of the fixed gun. The heavy bomb was swung down clear of the propeller on crutches prior to release.^[25]

Flying at 4,600 m (15,100 ft), the pilot located his target through a bombsight window in the cockpit floor. The pilot moved the dive lever to the rear, limiting the "throw" of the control column.^[26] The dive brakes were activated automatically, the pilot set the trim tabs, reduced his throttle and closed the coolant flaps. The aircraft then rolled 180°, automatically nosing the aircraft into a dive. Red tabs protruded from the upper surfaces of the wing as a visual indicator to the pilot that, in case of a g-force induced black-out, the automatic dive recovery system would be activated. The Stuka dived at a 60–90° angle, holding a constant speed of 500–600 km/h (310–370 mph) due

to dive-brake deployment, which increased the accuracy of the Ju 87's aim.^[26] When the aircraft was reasonably close to the target, a light on the contact altimeter (an altimeter equipped with an electrical contact which triggers at a preset altitude) came on to indicate the bomb-release point, usually at a minimum height of 450 m (1,480 ft). The pilot released the bomb and initiated the automatic pull-out mechanism by depressing a knob on the control column.^[26] An elongated U-shaped crutch located under the fuselage swung the bomb out of the way of the propeller, and the aircraft automatically began a 6g pullout.^[26] Once the nose was above the horizon, dive brakes were retracted, the throttle was opened, and the propeller was set to climb. The pilot regained control and resumed normal flight. The coolant flaps had to be reopened quickly to prevent overheating. The automatic pull-out was not liked by all pilots. Helmut Mahlke later said that he and his unit disconnected the system because it allowed the enemy to predict the Ju 87's recovery pattern and height, making it easier for ground defenses to hit an aircraft.^[27]

General characteristics

Crew: 2

Length: 11.10 m (36 ft 5 in)

Wingspan: 13.805 m (45 ft 3.5 in)

Height: 4.01 m (13 ft 2 in)

Wing area: 31.900 m² (343.37 sq ft)

Airfoil: Göttingen 256^[99]

Empty weight: 2,712 kg (5,980 lb)

Empty equipped weight: 2,760 kg (6,090 lb)

Max takeoff weight: 4,336 kg (9,560 lb)

Powerplant: 1 × Junkers Jumo 211Da V-12 inverted liquid-cooled piston engine, 890 kW (1,200 hp) for take-off
820 kW (1,100 hp) at 1,500 m (4,920 ft)

Propellers: 3-bladed Junkers constant-speed propeller

Performance

Maximum speed: 339.6 km/h (211.0 mph, 183.4 kn) at sea level

383 km/h (238 mph; 207 kn) at 4,087 m (13,410 ft)

Cruise speed: 209 km/h (130 mph, 113 kn) at 4,572 m (15,000 ft)

Range: 595.5 km (370.0 mi, 321.5 nmi) with 500 kg (1,102 lb) bomb
789 km (490 mi; 426 nmi) without bomb load

Rate of climb: 2.3 m/s (450 ft/min)

Time to altitude: 1,000 m (3,281 ft) in 2 minutes

2,000 m (6,562 ft) in 4 minutes 18 seconds

3,716 m (12,190 ft) in 12 minutes

Armament

Guns: 2× 7.92 mm (0.31 in) MG 17 machine gun forward, 1× 7.92 mm (0.31 in) MG 15 machine gun to rear

Bombs: 1× 250 kg (550 lb) bomb beneath the fuselage and 4× 50 kg (110 lb) under-wing.

