

VOL 15
NO. 1

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VOL.15
NO. 1
1982



INTERNATIONAL PLASTIC MODELLERS SOCIETY OF CANADA

Sabres , CF116 , DUKW , Mk IX Gun





QF-86E ARMY SABRES

by Ron Downey

The sky over New Mexico is seeing an unusual sight these days – Sabre jets! The U.S. Army has ex-RCAF Canadair CL-13A Sabre MK 5's on force and presently flying at Holloman AFB.

A company called Flight Systems, Inc. purchased a total of 55 of these aircraft and, under contract, is providing the Army with a very cost effective method of providing drone aircraft for testing new missiles, flares, ECM pods, etc. Initial conversion work started in 1975 and is continuing today. Thirty-six aircraft have been delivered to date, with 4 airframes unusable and 15 more which can be converted.

These aircraft are designated QF-86E's by the Army and retain their RCAF tail numbers for official numbering. Before being converted to drones and sold to the Army, each aircraft was registered with the FAA and received an "N" number. As an example, 23315 was registered as N72492.

The CL-13A MK 5 is a Canadian built Sabre and was the first to use the Orenda 10 engine in place of the United States J-47 engine. This model, called "The Hard Edge Five", has basically an F-86E fuselage but uses the "6-3" extended leading edge wings, with 5" high wing fences at 70% of the span; originally tested and used on F-86F-25, -30, and -35 aircraft. In fact, many people erroneously call these Army aircraft QF-86F's. Confirmed ex-RCAF serial numbers are: 23028, 23036, 23106, 23146, 23147, 23160, 23190, 23198, 23203, 23205, 23215, 23259, 23283, 23309, 23315, 23323, and 23339.

Most aircraft are used for just drone work using the "Vega" drone control system; but, five aircraft are configured for a new system developed by IBM and called the "Drone Formation Control System". DFCS is a method whereby up to 6 drones can be flown and controlled in formation at one time. Aircraft 23309 has now been converted for this role.

As the Army did not impose any special paint or marking standards upon Flight Systems, the aircraft widely differ in details. However, the "standard" scheme is natural metal overall with orange paint on the empennage up to the aft end of the speed brake and on the top and bottom of each wing from the wing fence outboard. (Sometimes the wing fence is painted also.) The aircraft are painted at Flight Systems main location at Mojave, CA. The color used is an automotive enamel called Centari Omaha Orange No. 31AH (see sample) and is very close to FS 12473. The aircraft are "scrubbed down" prior to painting to remove old markings but when the light is right, the long protected places which were the RCAF letters and insignia are still visible as brighter aluminum areas. (See drawings.) Most aircraft have

the gun ports plugged with lead and "Bondo" to give a smooth surface; especially, as the port side of the aircraft has an Angle-of-Attack transmitter which is very important in drone control work. These panels are a medium gray on most aircraft. The original black anti-glare panels have been changed to white (in different degrees) to keep the forward bay (full of electronics) cooler. Each aircraft has a black destruct panel on each side of the fuselage about halfway back. These panels have a green and white light in them to allow the chase plane to see if the on-board destruct system is functioning prior to a missile firing. The white light was originally red, but white was easier to see. The drones are normally flown with a pilot aboard (on all but live missile shots where the drones are the targets and use the mobile Vega Controller Van). No wing walkways are present and the cockpits are black on the earlier aircraft and dark gray on the later. On the left (port) side of the fuselage can be seen the Vega System antenna cable with the antenna being under the tail. Earlier drones had an antenna under the nose. On the right (starboard) side of the aircraft the oil system pipe extends from the spine to the tail cone exit. This oil is injected into the exhaust for visual tracking purposes. The wingtips contain either the original lights or missile "scoring" antennas. The vertical stabilizers have various black areas or silver tape as mods were made to them.

Several drones have had nose art painted by one of the employees at Mojave. Among the figures used were Mickey Mouse (23215), Goofy, Road Runner, and a cow (23203) "Old Bessie", which was named for the first aircraft converted to a drone. Also, one drone was named "Moose" after the nickname of the Project Director, Jack Musitano.

Jack also caused another aircraft to have a name, and that is "Thumper". "Thumper" is one of the oldest drones still around and has had 6 missiles shot at it. It is called "Thumper" as every time it was flown, it would "thump" in-flight and the cause was never found. This drone had five lucky missile shots but is presently being rebuilt in the tail section and engine as they were extensively damaged by an AIM-9 missile hit on the sixth shot last year in which the aircraft barely made it back.

Flight Systems also has six CL-13B MK 6 Sabres which they use for target towing aircraft stationed at Holloman AFB, and many company owned ex-Canadian T-33's used as drone chase aircraft.

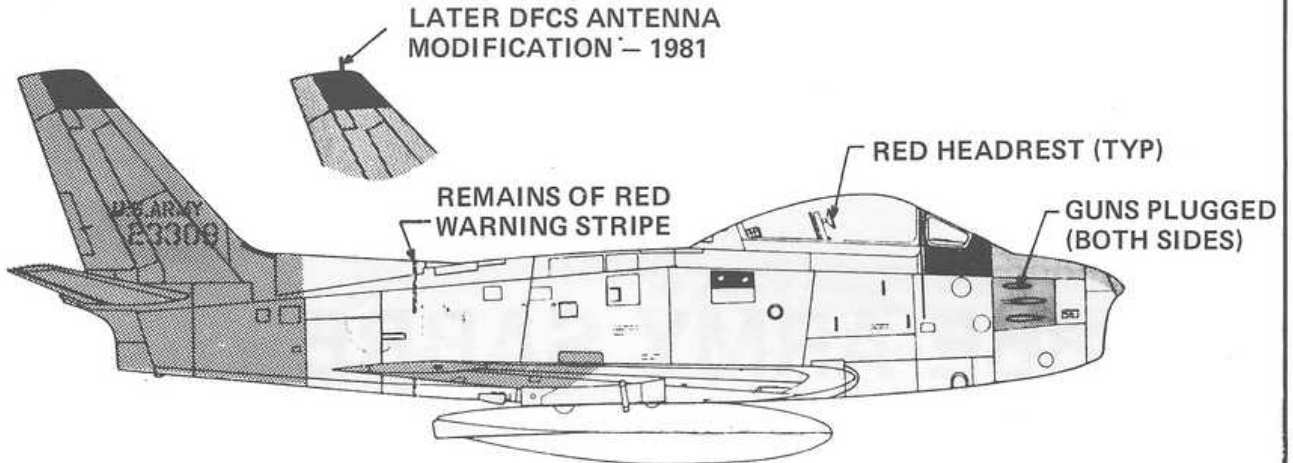
Several Flight Systems, Inc. people helped in the preparation of this article and deserve thanks: Project Director Jack "Moose" Musitano at Mojave, and especially Test Pilot & Drone Controller Dave Clardy at Holloman AFB, who endured numerous phone calls.



23339 – A WELL WORN OLDER DRONE WITH "NON-STANDARD" ORANGE PAINT – 1981
"THUMPER" FIGURE IN FLAT BLACK



LATER DFCS ANTENNA MODIFICATION – 1981

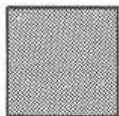


23309 BEFORE COMPLETE DRONE CONVERSION – 1979
NOTE: WING PAINTING EXTENDS ONTO FENCE



23283 WITH COMPLETE ORANGE REAR FUSELAGE – 1978

ORANGE



GRAY



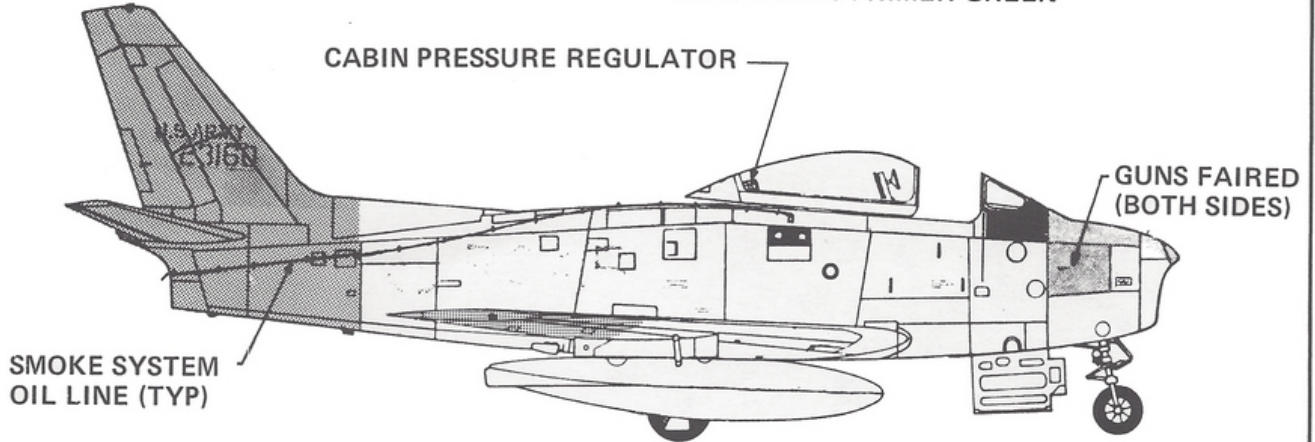
WHITE



BLACK



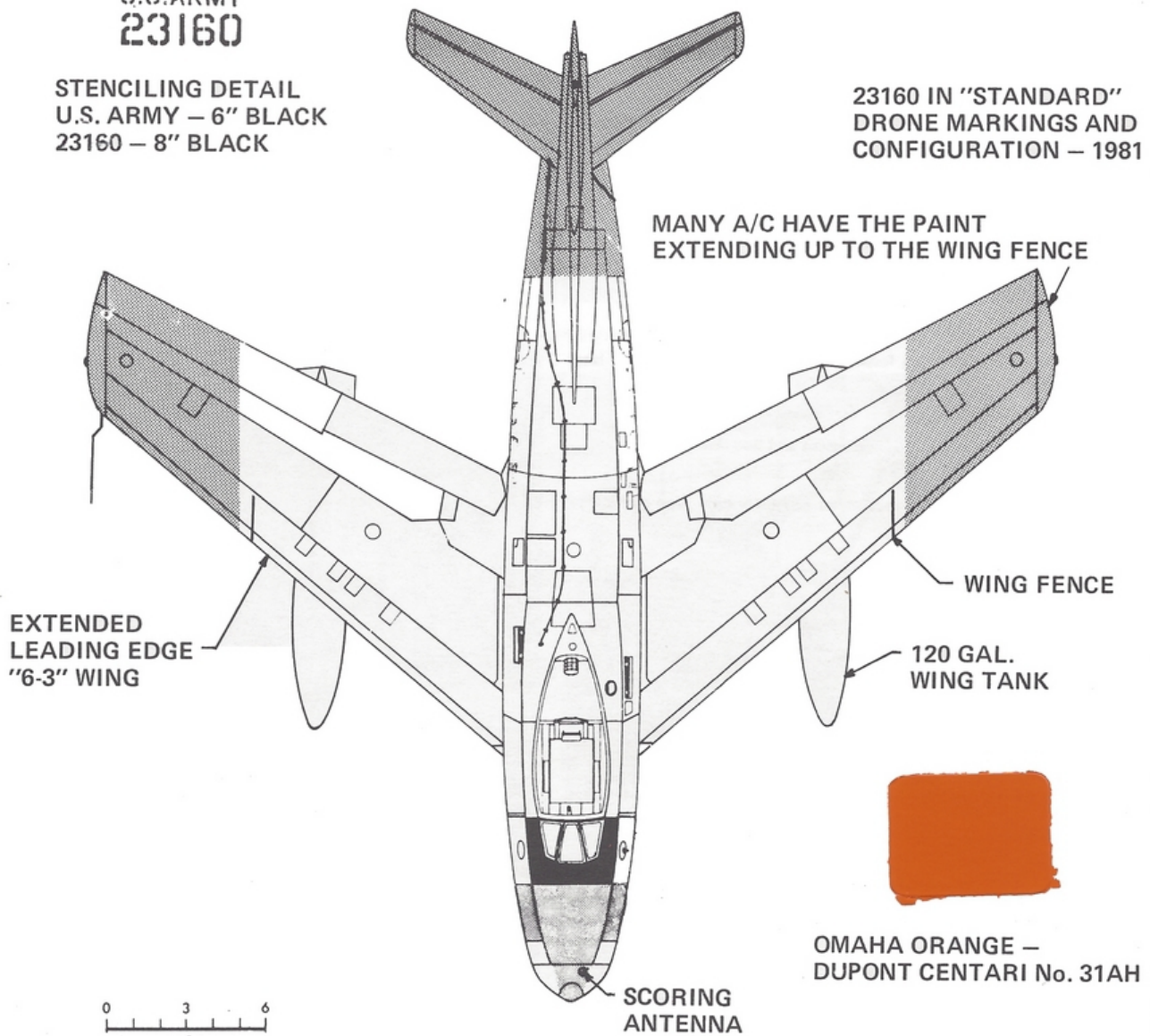
NOTE: SPEED BRAKES BLEED OPEN ON GROUND –
INTERIOR IS PRIMER GREEN



U.S. ARMY
23160

STENCILING DETAIL
U.S. ARMY – 6" BLACK
23160 – 8" BLACK

23160 IN "STANDARD"
DRONE MARKINGS AND
CONFIGURATION – 1981



QF-86E DRONE DETAILS



Above – Side view showing faded RCAF markings, oil line and later DFCS antenna mod.

Right-View of oil line showing placement and line clamps.

Below – View showing destruct panel and oil supply pipe going into fuselage.





Above — Left hand view of Sabre (No. 23339) undergoing rebuild from damage caused by AIM-9 hit — January 1981.

Below — Close-up of same aircraft, "Thumper". Note plugged guns and small scoring antenna on nose.





Aft view showing Vega antenna cable, oil line termination and open speed brakes.



Under fuselage Vega antenna location.



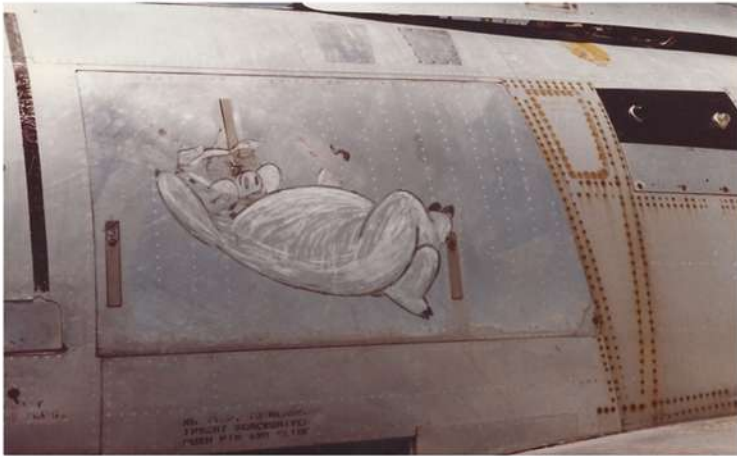
Close-up view of No. 23160, showing Vega system antenna cable and oil injection nozzle by tail pipe.



QF-86E No. 23352. Side view showing "Goofy" art and Patriot missile logo. Patriot was one of the programs which used these drones.



Good nose view showing plugged guns, 'beware of intake' warning (on some a/c) and Patriot missile logo.



"Pig" nose art on the Left side of one a/c. The pig is faded white with black outline.



Shot showing the orange colour on wingtips. Notice that these a/c had color up to the wing fence.