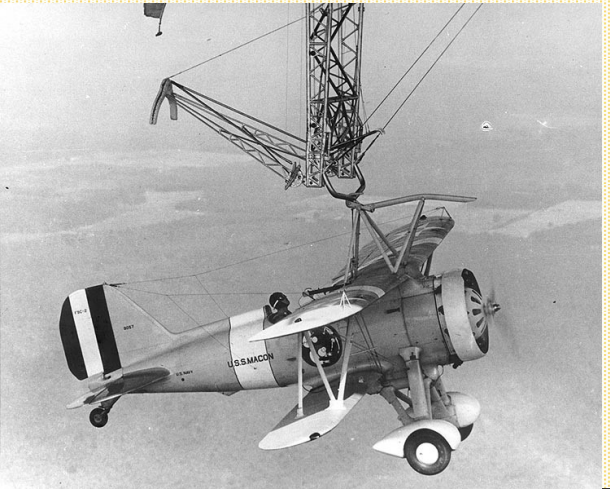
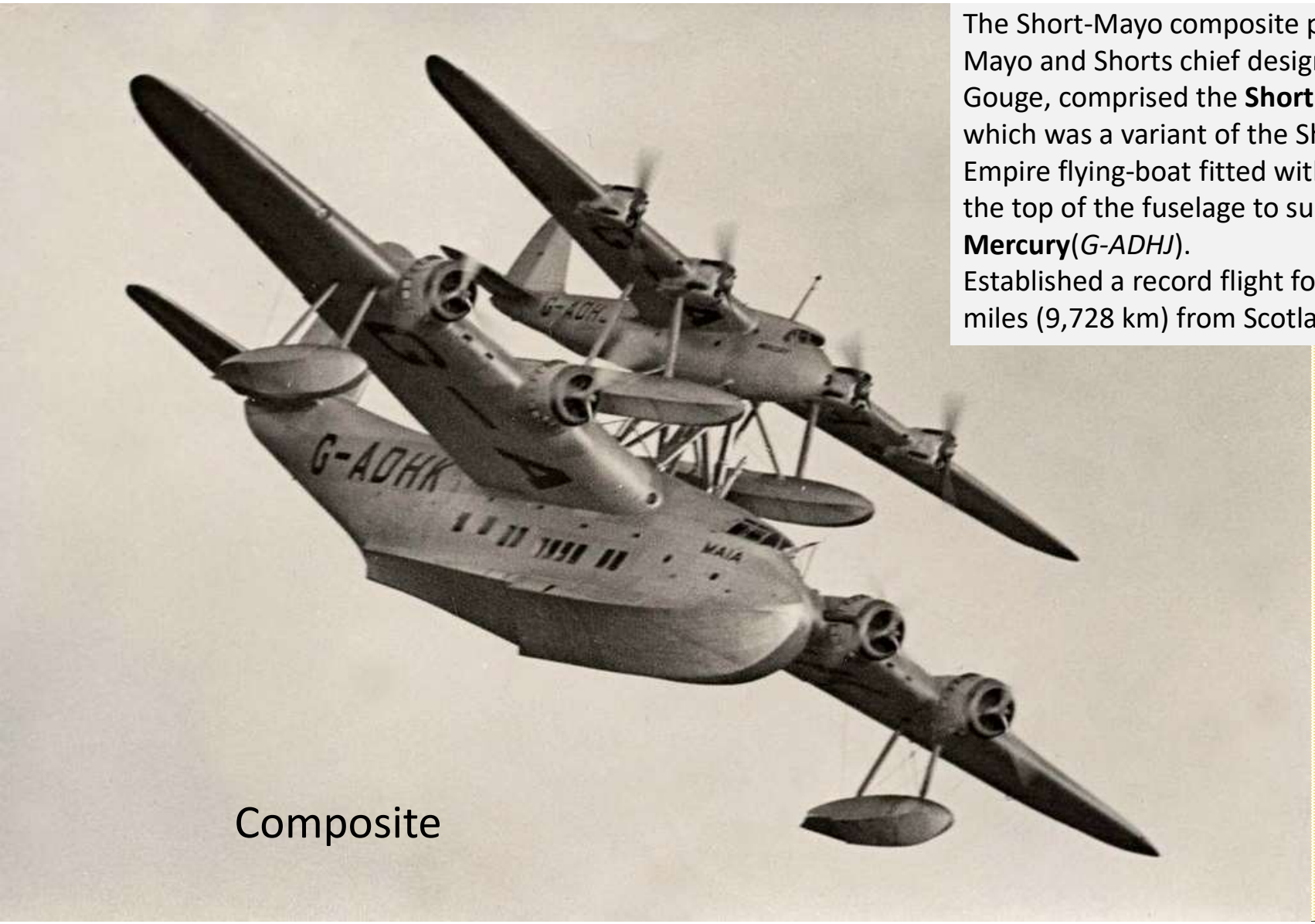
Parasite Fighters

Parasite aircraft – are there to enhance the task of the parent – that continues with its own mission – which may be only to be a mother ship.

Composite Aircraft – the part that detaches then completes the mission.

(Not to be confused with more modern usage of *composite construction* – of different materials.)





Composite

The Short-Mayo composite project, co-designed by Mayo and Shorts chief designer Arthur Gouge, comprised the **Short S.21 Maia**, (*G-ADHK*) which was a variant of the Short "C-Class" Empire flying-boat fitted with a trestle or pylon on the top of the fuselage to support the **Short S.20 Mercury**(*G-ADHJ*).
Established a record flight for a seaplane of 6,045 miles (9,728 km) from Scotland to South Africa

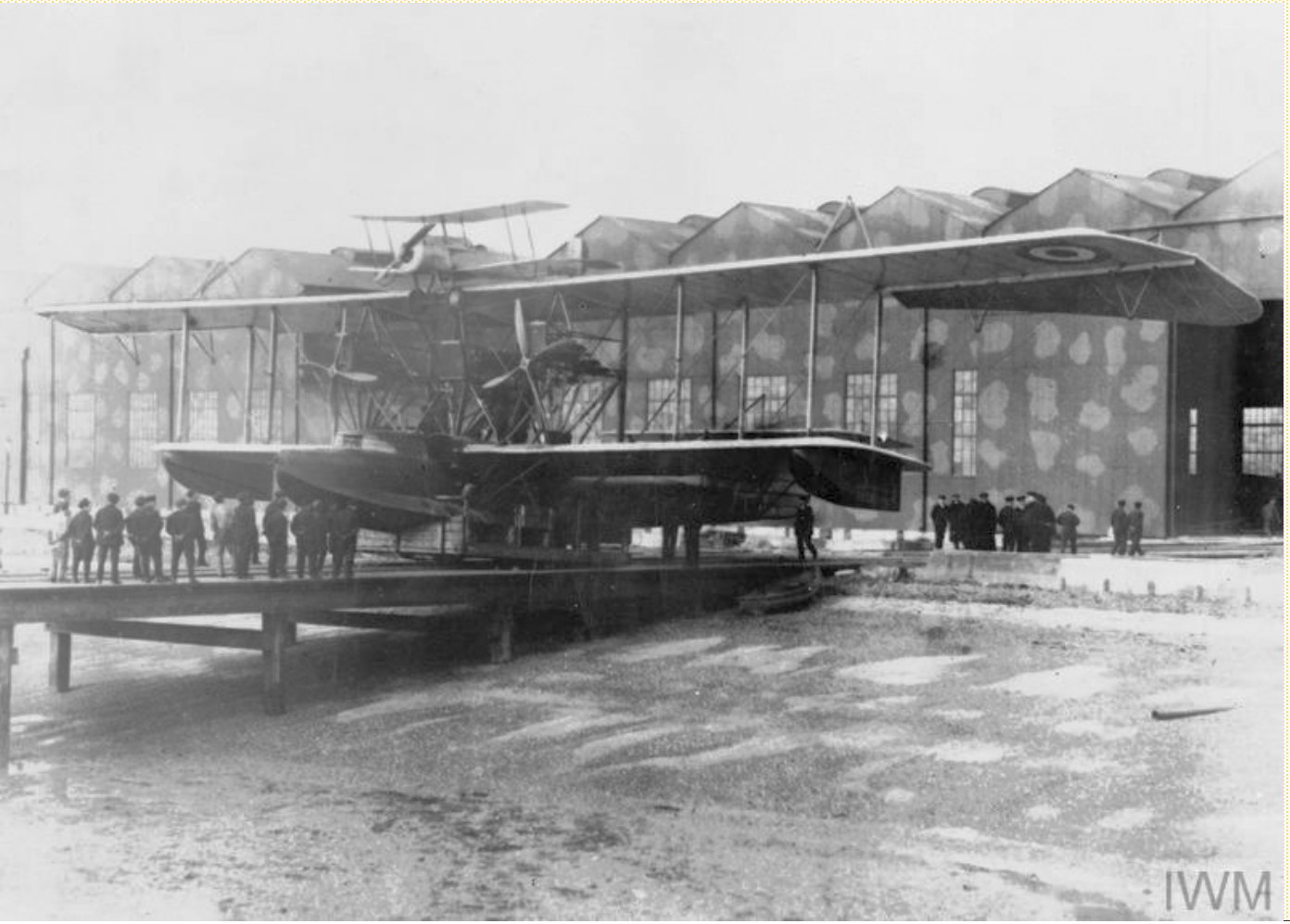
Larger aircraft are commonly thought to be at risk from attacking fighters.

One way of defence has often been considered – a fighter that rides along hitched to the parent aircraft – which can detach while airborne and defend the larger aircraft and perhaps re-attach in flight.

Other missions for parasites have included reconnaissance and ground attack.

Here I an concentrating on manned aircraft.

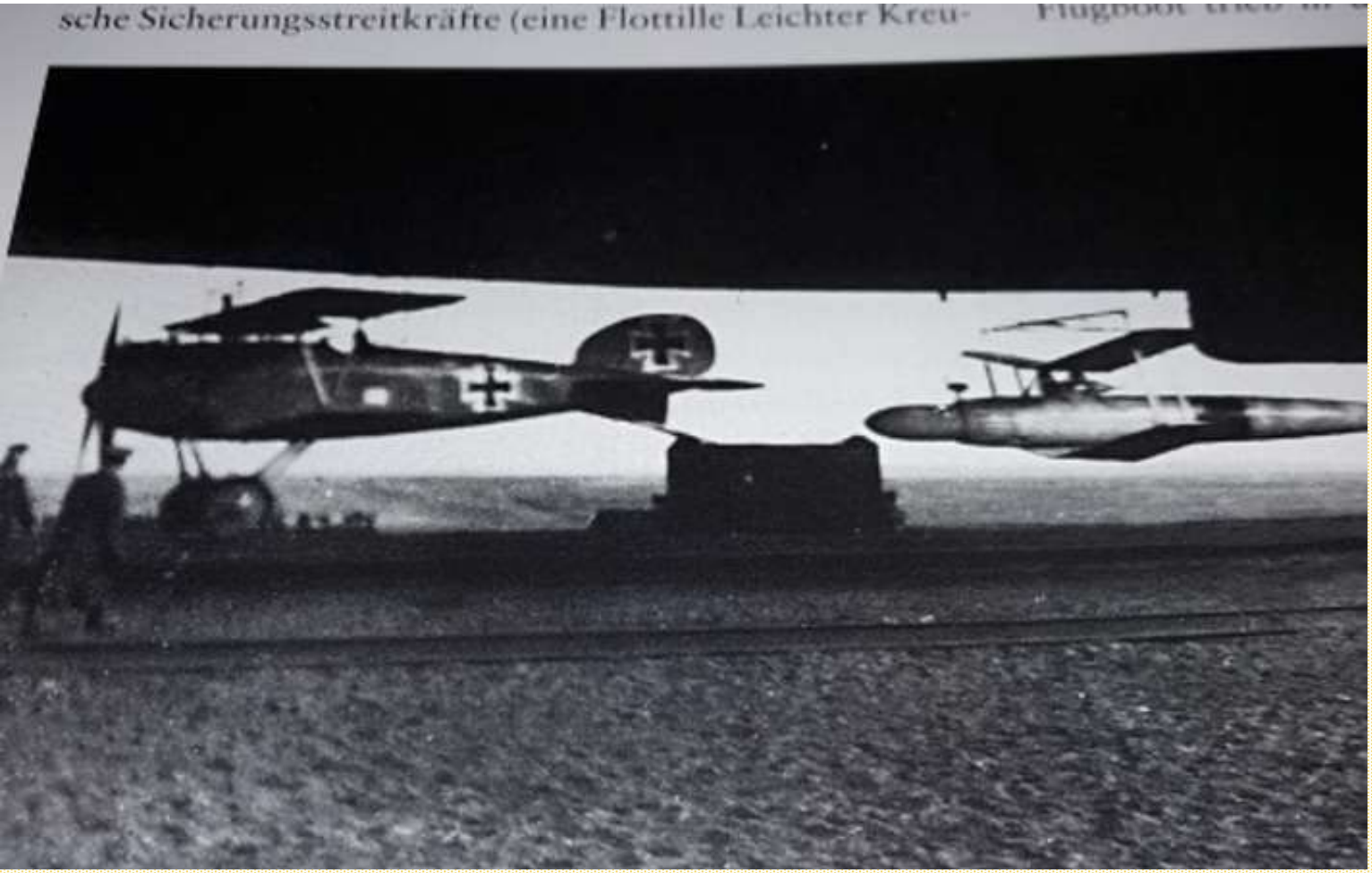
Before the 2nd World War the Russians and after the war the Americans, experimented with parasite aircraft on aircraft



In 1916 a Felixstowe Porte Baby was used to prove the concept of a larger aircraft carrying aloft and launching a lighter aircraft (in this case a Bristol Scout fighter).

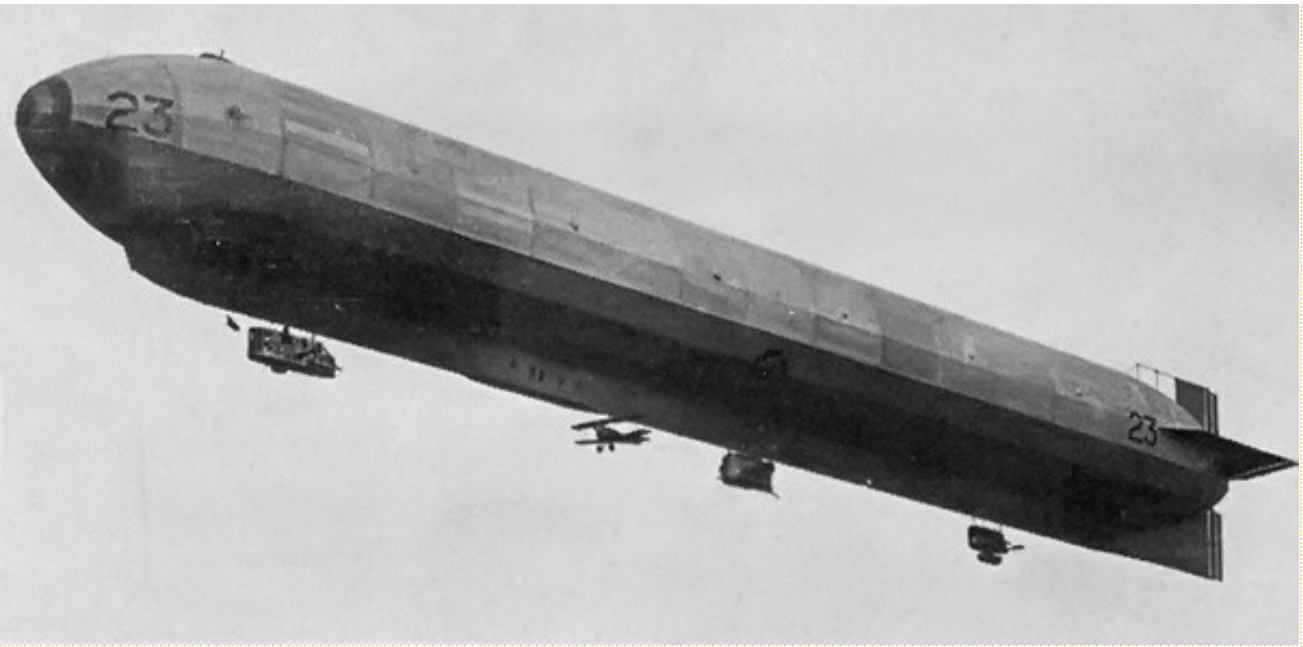
Airships carrying Aircraft

Airship	*Aircraft*	*Country*	*Date*	*Status*	*Description*
L 35/LZ 80	Albatros D.III	Germany	February 1918	launched only	Also tested glider bomb
HMA 23	Sopwith 2F.1 Camel	UK	November 1918	launched only	
TC-3	Sperry Messenger	US	December 1924	launched & recovered	USAAC Non-rigid airship
TC-7	Sperry Messenger	US	December 1924	launched & recovered	USAAC Non-rigid airship
R33	De Havilland DH.53 Hummingbird	UK	October 1926	launched & recovered	
R33	Gloster Grebe	UK	December 1926	launched & recovered(?)	Two fighters carried simultaneously
USS Los Angeles (ZR-3)	Vought UO-1	US	July 1929	launched & recovered	US Navy airship
USS Los Angeles (ZR-3)	Consolidated N2Y-1	US	September 1931	hookup	1st night hookup
USS Akron and Macon	Curtis F9C Sparrowhawk – up to five (Macon) or three (Akron) or Consolidated N2Y-1 (two-seats) for training	US	1931-1935	Operational, Internal hangars	Deployment
LZ 129 Hindenburg	Focke-Wulf Fw 44	Germany	March 1937	Unsuccessful(?) others say yes. Loss of the Hindenburg in May 37 ended development	US trapeze design, intended for mail planes.



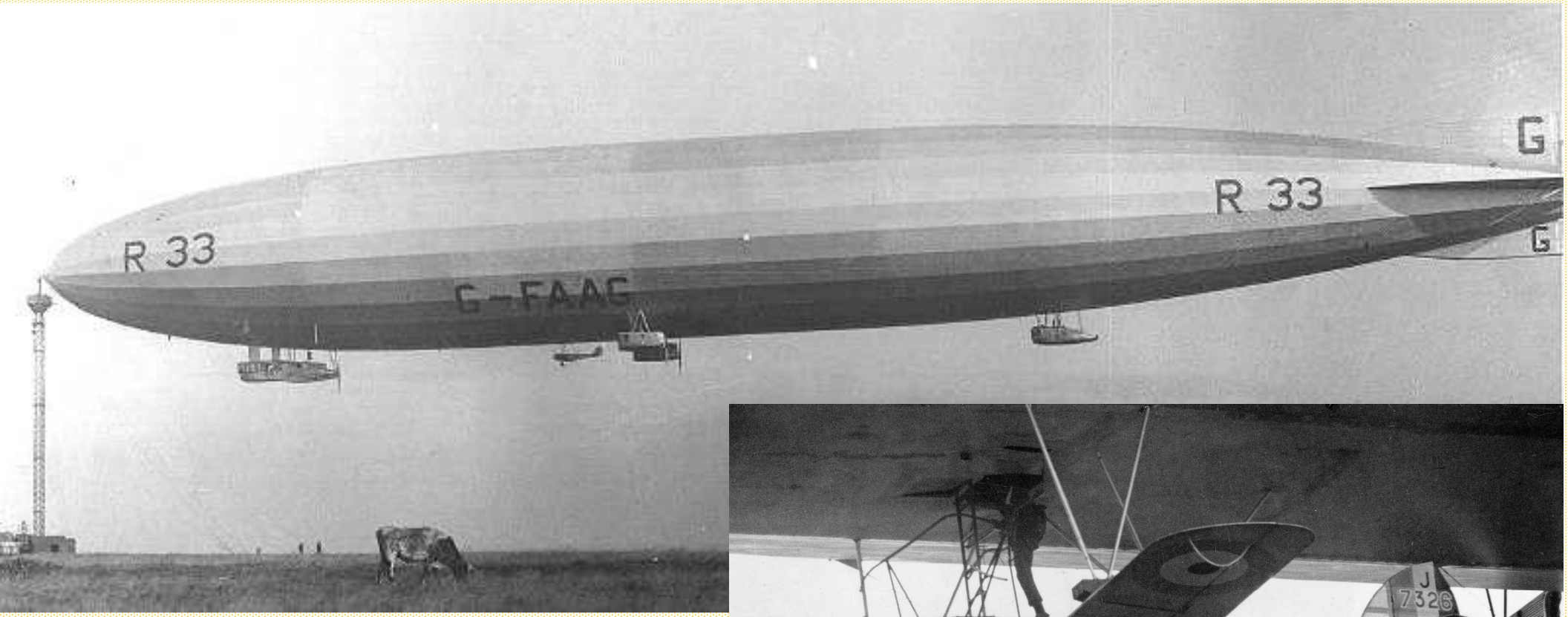
Albatros D.III and glider bomb aboard L 35/LZ 80

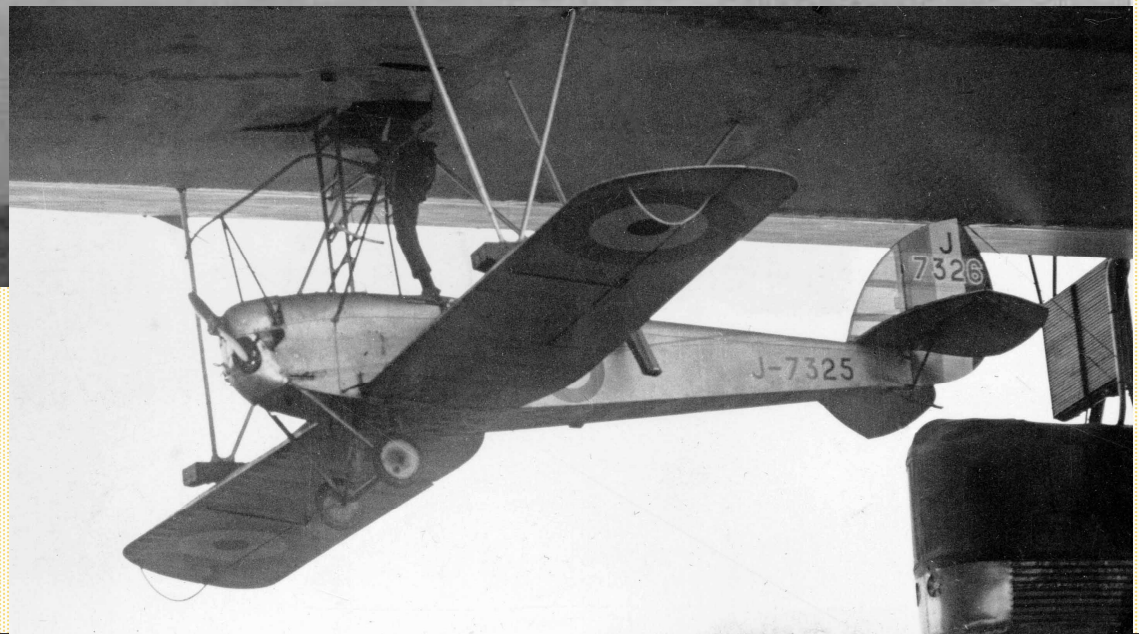
For much of the war, by shedding ballast, a Zeppelin could outclimb opposing fighters. More weight was therefore unattractive.



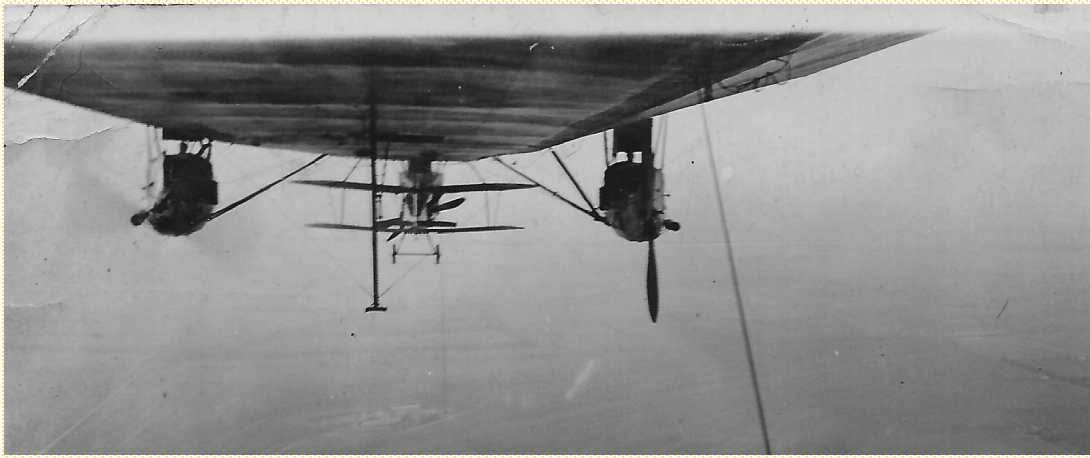
Type 23 Airship with Sopwith Camel

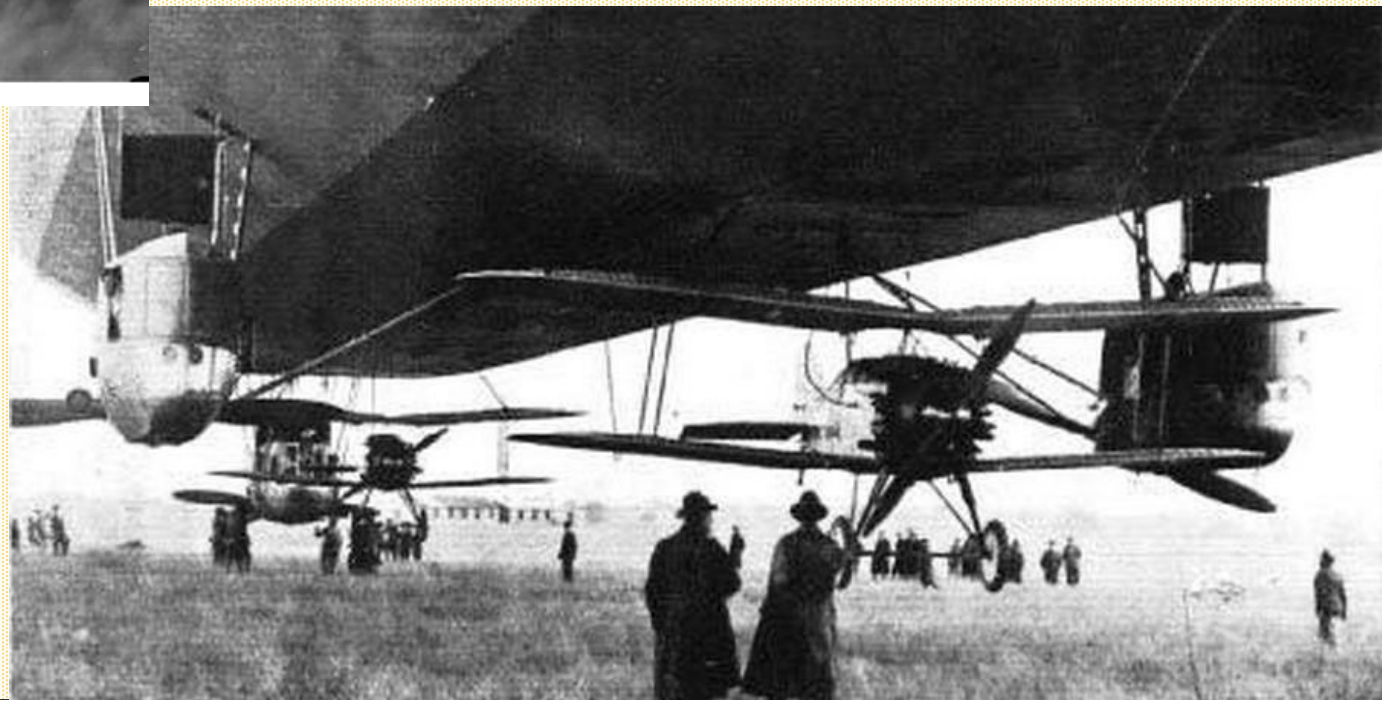
TC-7 and Sperry Messenger



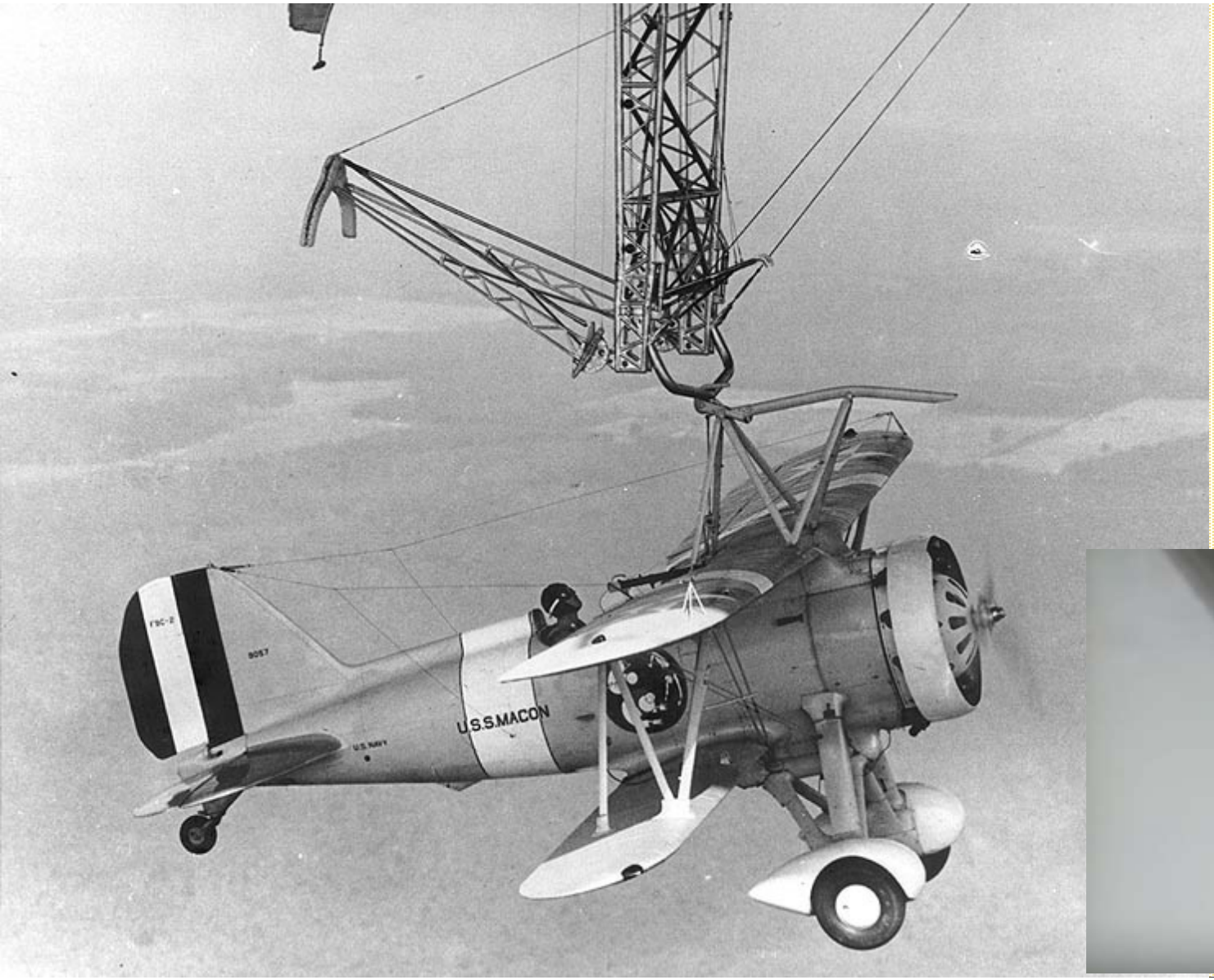


De Havilland DH.53 Hummingbird
Engine started by diving up to the speed where the propeller rotation could achieve starting.
First hook-up attempt the trapeze was damaged but still caught. Several later attempts successful.





R33 with Grebes



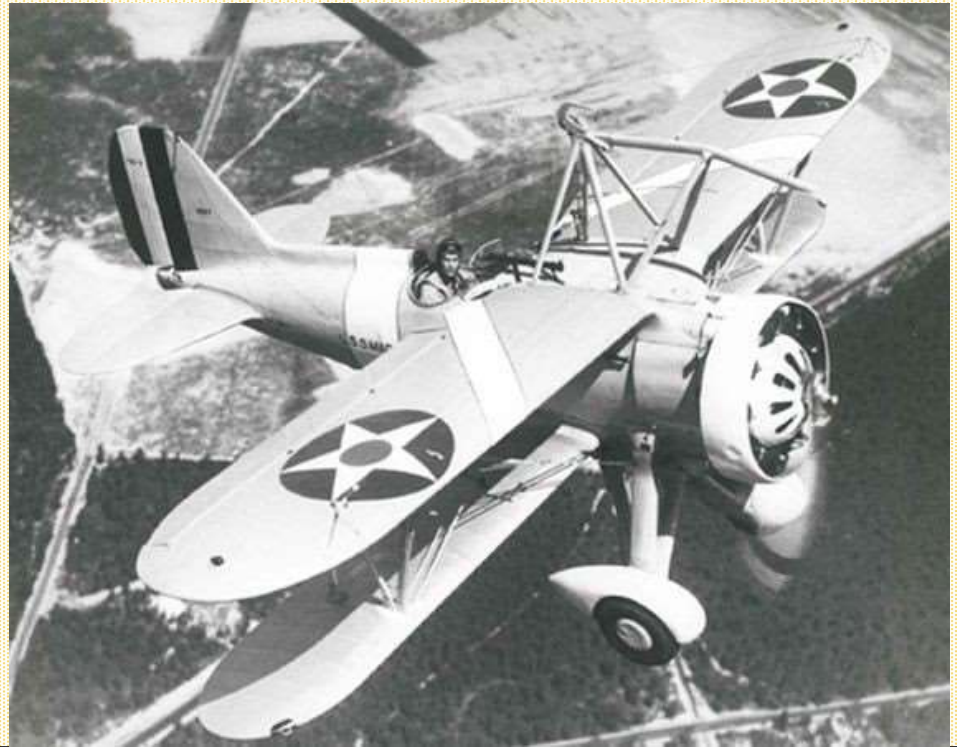
Akron / Macon with Sparrowhawks

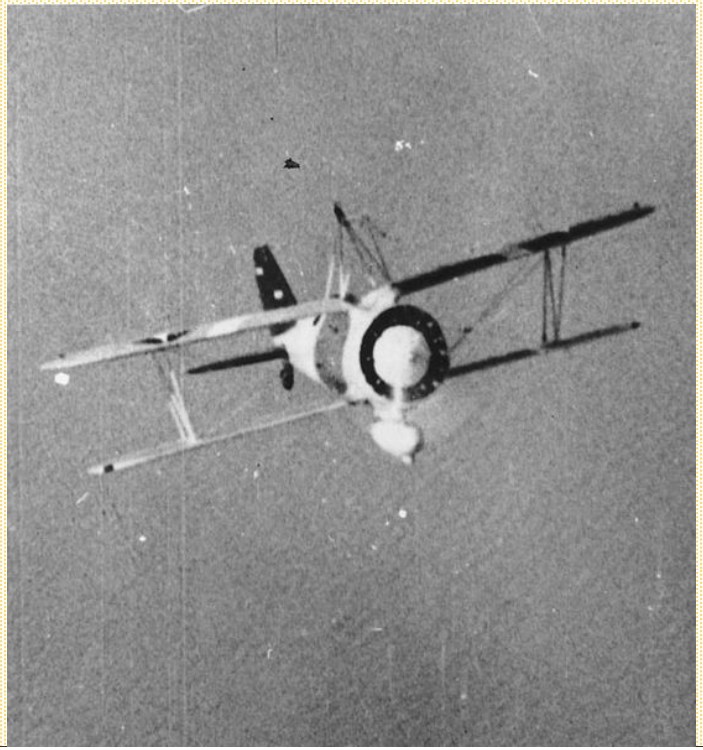
Vought UO-1

Photo # NH 80775 Consolidated N2Y-1 serving with USS Akron, 1932

Consolidated N2Y-1

Once the system was fully developed, in order to increase their scouting endurance while the airship was on over-water operations, the Sparrowhawks would have their landing gear removed and replaced by a fuel tank. When the airship was returning to base, the biplanes' landing gear would be replaced so that they could land independently again. Sometimes they would be flown aboard so the Airship could lift off with more fuel.
For much of their service with the airships, the Sparrowhawks' effectiveness was greatly hampered by their poor radio equipment, and they were effectively limited to remaining within sight of the airship. However, in 1934 new direction-finding sets and new voice radios were fitted which allowed operations beyond visual range, exploiting the extended range offered by the belly fuel tanks.

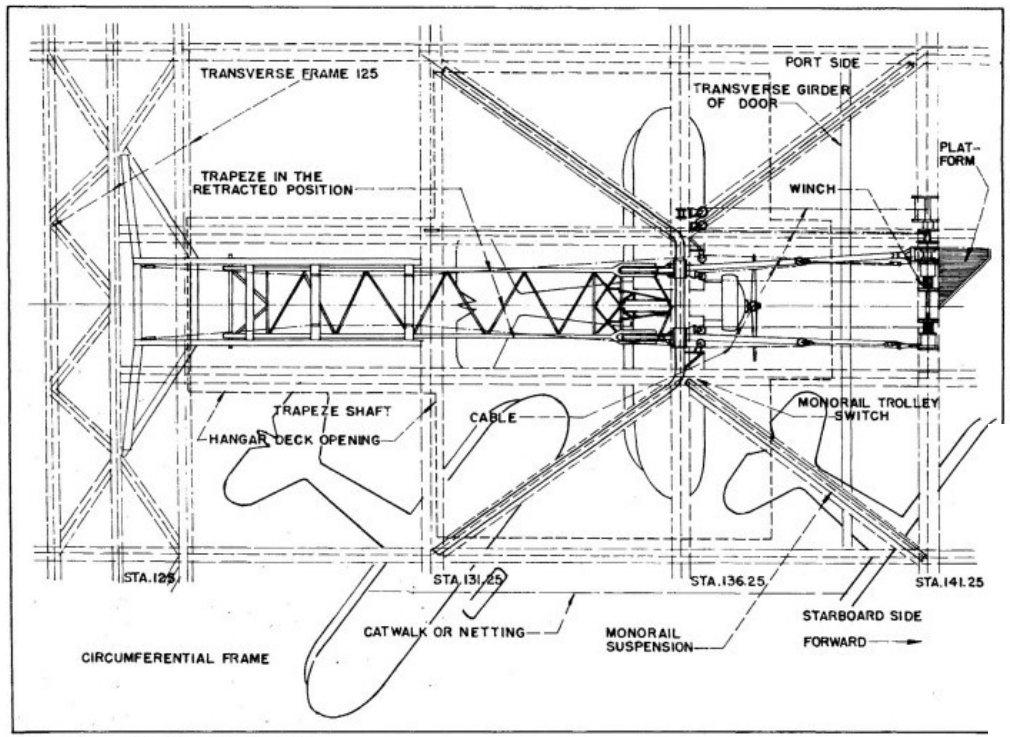




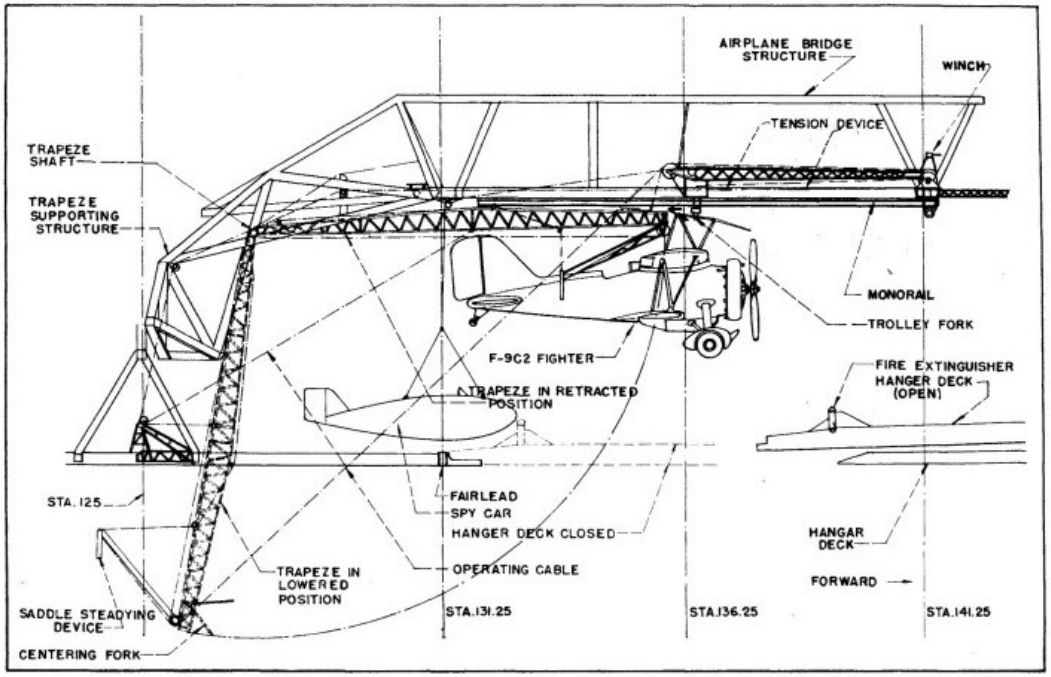
Curtiss F9C-2 Sparrowhawk, Dirigible Fighter
National Museum of Naval Aviation

Naval pilots preferred airship hook-ups to carrier landings – much smoother.

DRAWN BY WILLIS L. NYE, AMERICAN AVIATION HISTORICAL SOCIETY

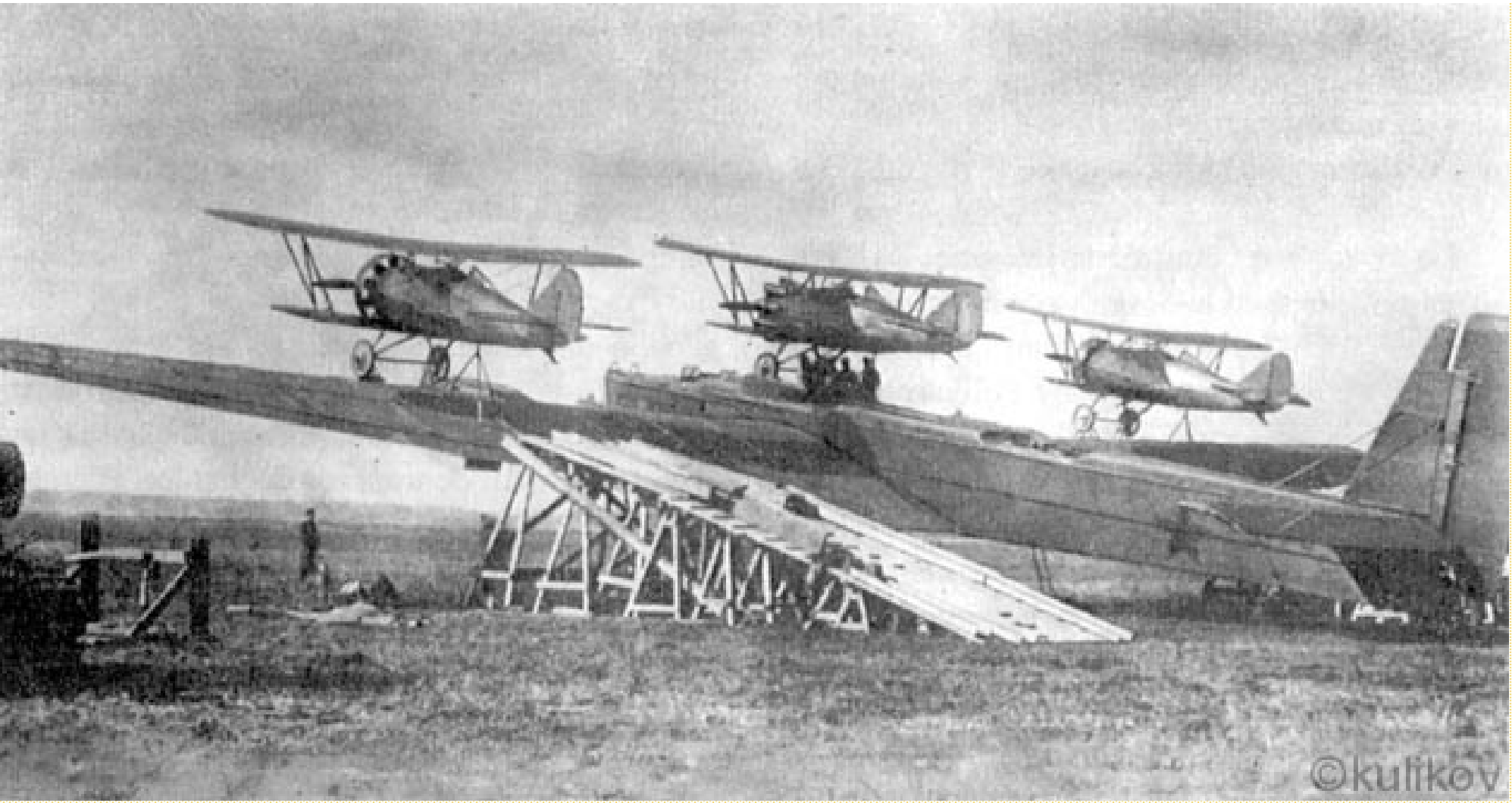


Plan View—Airship Airplane Hangar



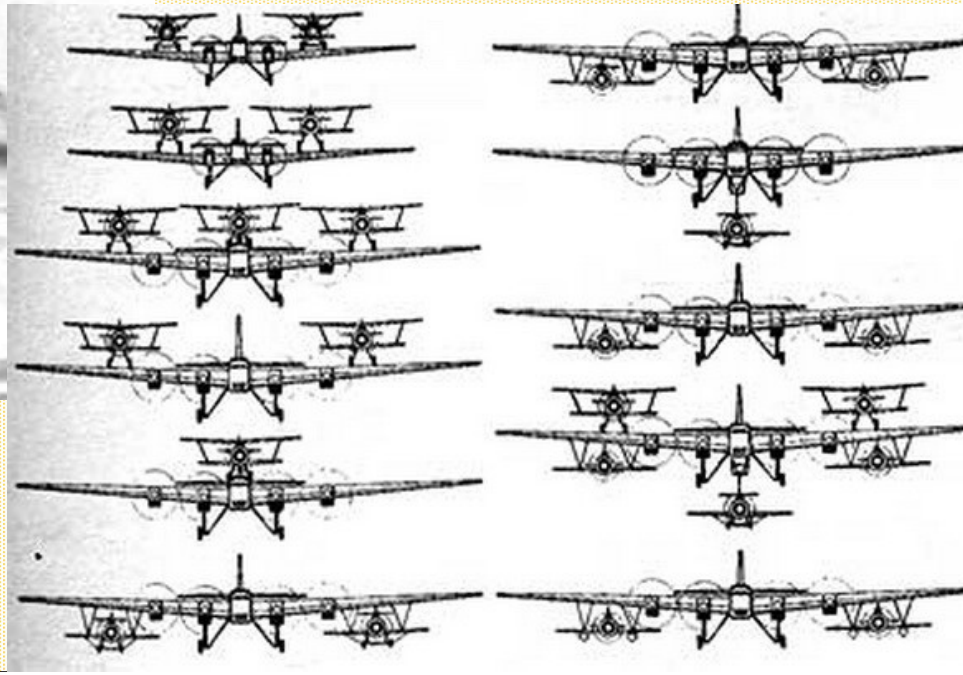
Longitudinal Section—Airship Airplane Hangar

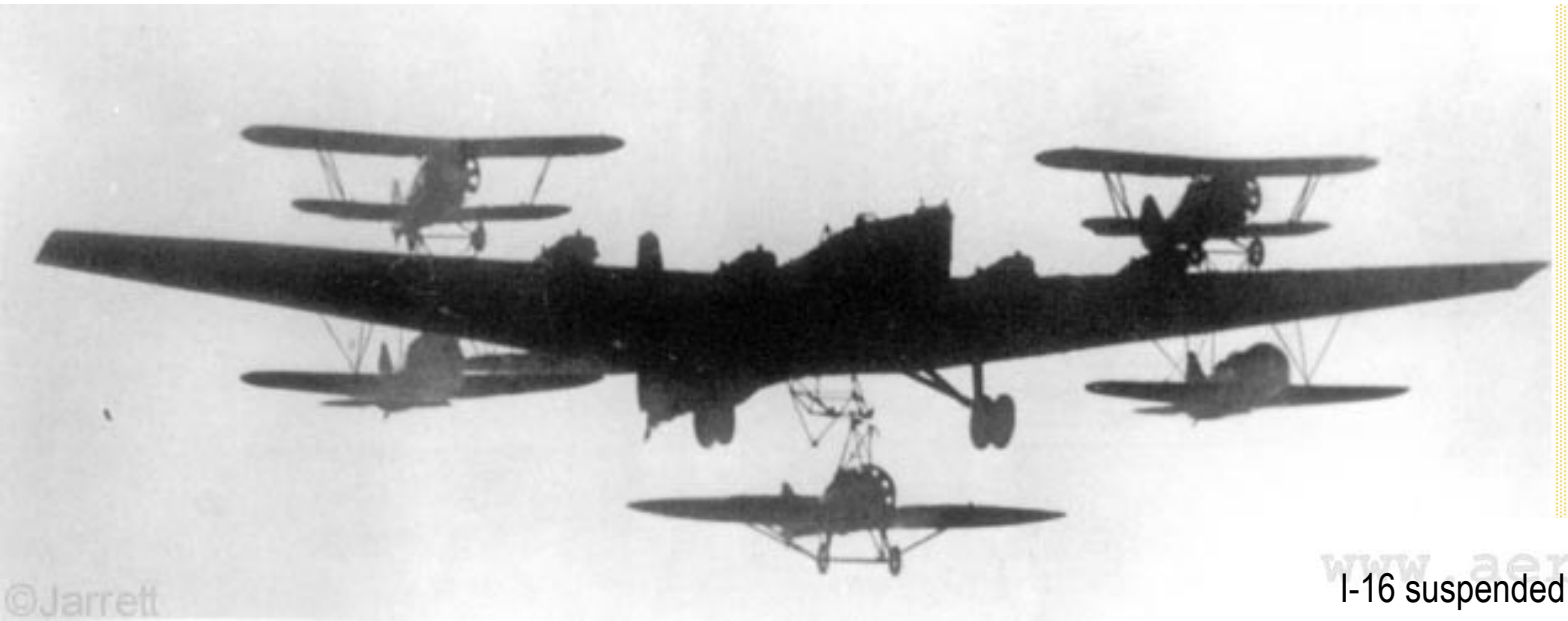
Macon Wreck Monterey California



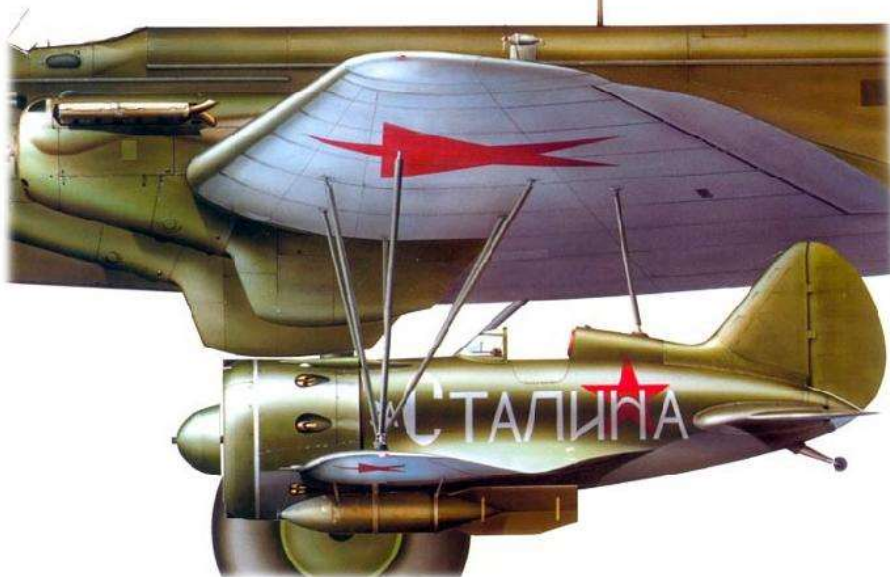
Zveno Z-2 with the ramps permitting the installation of the Polikarpov I-15 on its wings.

1935: the I-Z hooks up to the trapeze of the TB-3 bomber acting as transporter. Could not take off with the trapeze aircraft.





I-16 suspended under the wing of a TB-3

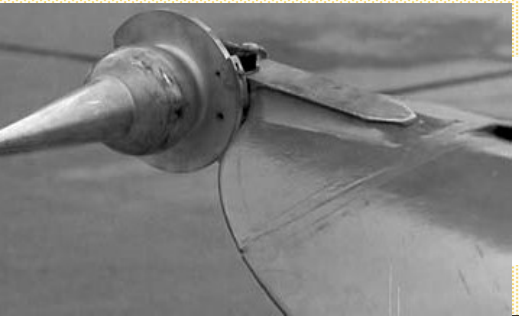


The Aviamatka PVO (transport aircraft for aerial defence) was tested at the end of 1935. Assembly composed of a Tupolev TB3 4M-17F capable of carrying 5 to 6 aircraft. Polikarpov I-15 above I-16 below the wings, I-Z on the trapeze..

Was used operationally with two I-16s for divebombing. The I16s had long range tanks to return separately. Raids were made from Crimea to Romania. Composite rather than a parasite in this application.

29 sorties , Three I-16s were lost, no TB-3s

1949 trials: The Culver Q-14B Cadet was a single-place general aviation airplane that the Army adopted for use as a radio controlled drone. The little drone still had a cockpit and flight controls.
Post take-off connection only



Cadet wing tip – could also face forward

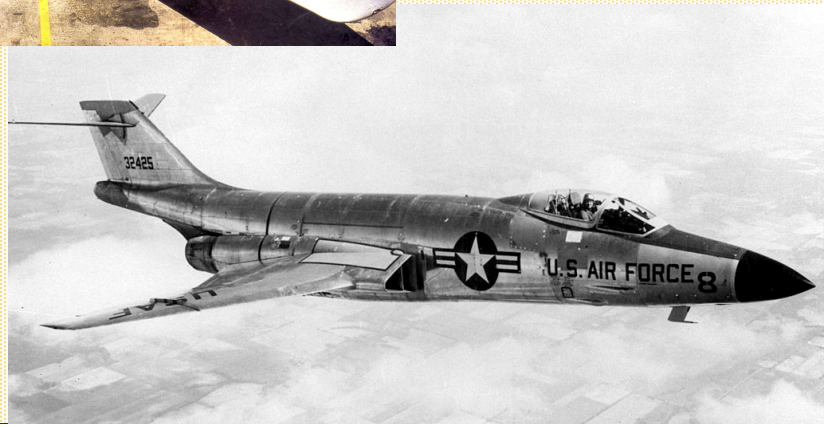
US Bomber Escorts – Ranges

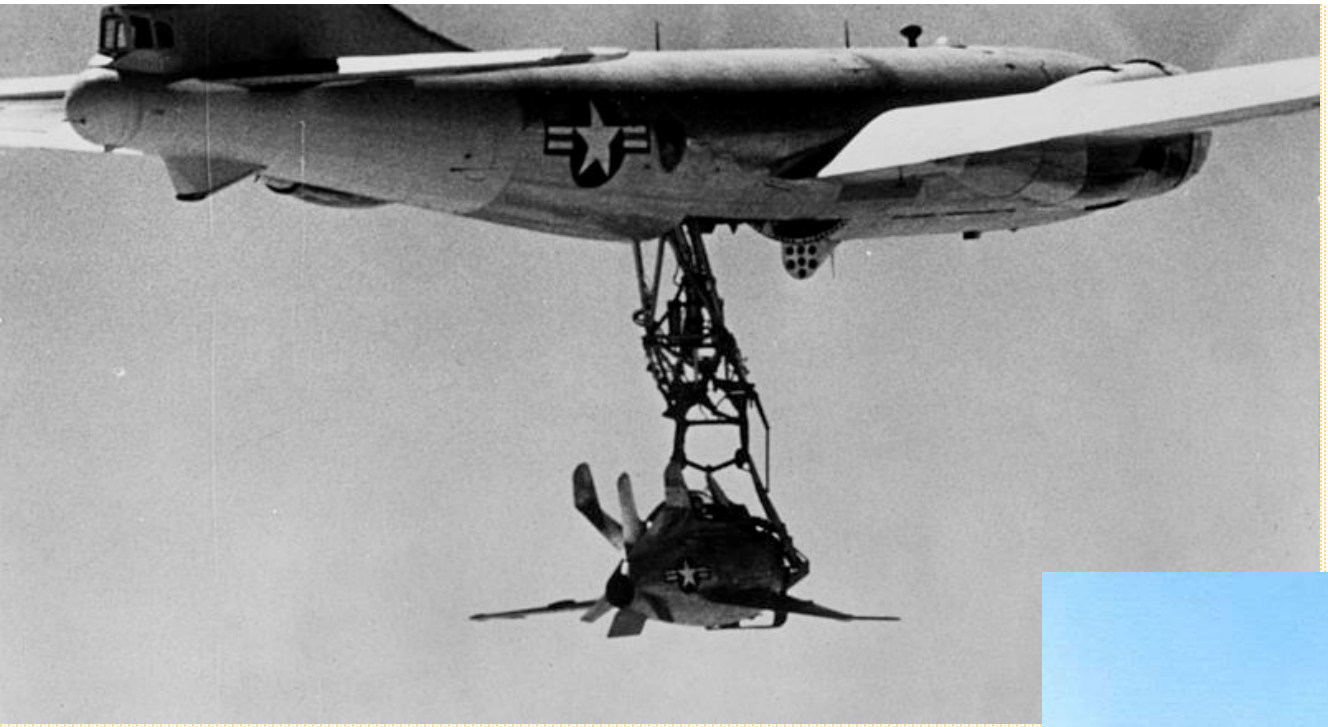
North American Mustang P-51D
- Without drop tanks 1,530 km
- With drop tanks 2,656 km

Pioneered escorted WW2 raids as far as Berlin from Britain.

North American Twin Mustang F-82G 3,600 km (But most were built as night fighters rather than the original intent as bomber escorts)

McDonnell F-101A Voodoo – Without mid air refuelling 2,735 km. With refuelling limited by crew only.
Conceived as a long range escort but the first models were fighter bombers, later interceptor and reconnaissance versions.





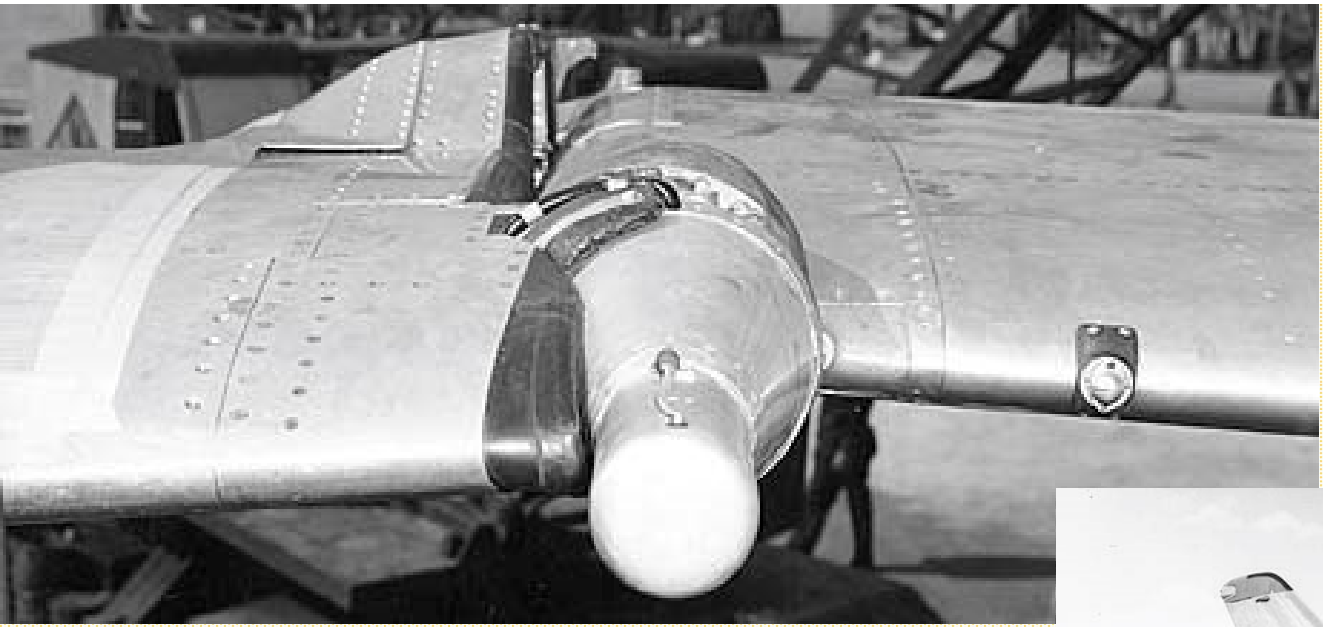
Goblin with a B-29 mother ship. Originally intended for B-36s and B-35 flying wings, was cancelled before ever came close to that.

First flight of the prototype was an aerial launch and recovery. Only very skilled pilots could manage because of the turbulence.
One attempt resulted in damage to the Goblin. That and two other flights resulted in belly landings

McDonnell XF-85 Goblin

"Tip Tow" EF-84D Thunderjet on a B-29
Only two jets were modified – one left and one right attached. The experiment ended with a fatal crash of one jet and the B-29.
Post take-off connection only.
Could pass power, fuel and conditioned air.

"Tom Tom" Republic YRF-84F Thunderflash approaches the left wing tip of the Convair JRB-36F
Both are reconnaissance versions
Post take-off connection only.



Thunderjet – ground mating trial

Thunderflash

A Republic YRF-84F launches from its Convair GRB-36F mother ship during FICON (Fighter Conveyor) tests in the 1950s.

Was first conceived as a fighter conveyor – would fly in formation with bomb tasked B-36s.
Hook-up was difficult – turbulence from the bomber and natural turbulence.
Final development was for reconnaissance.

Pre take-off stowage possible.
A few operational examples were made but little used – as were the reconnaissance versions of the B-36 themselves.
The U-2 made the reconnaissance version of the B-36 obsolete.

- The US trials lead to little of practical use.
- Curiously there seemed to be little need for long range fighter escorts of bombers.
- The one US application of the B 36 / F 84F was a composite – even if it originated as a parasite development – which suggests the parasite /composite dichotomy not very useful.
- Perhaps the launch experience carried over into the Bell X craft and subsequently of cruise missiles.
- Spacecraft make a lot of use of docking, so perhaps these experiments gave some confidence to those designers.

END