

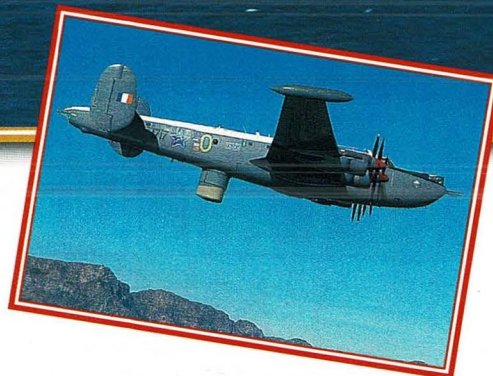
AVRO

# SHACKLETON MR

- Long-range maritime patrol ● Anti-submarine bomber



WARPLANES  
OF THE 1950s,  
1960s AND 1970s

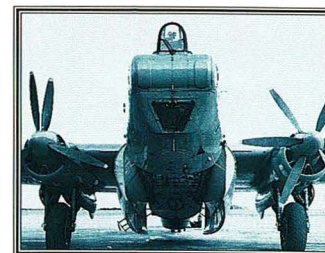


One of its pilots called the Avro Shackleton "forty thousand rivets in formation," but it was really a queen of the skies. This four-engine descendant of the Lancaster was designed to counter the Soviet submarine threat, but the "Shack" grew into an all-purpose maritime and radar early-warning aircraft that patrolled Britain's shores with ponderous dignity for nearly four decades.

▲ The Shackleton soldiered on for far longer than anyone ever thought it would. It flew in South African colors until the mid 1980s, and it was the last heavy piston-engine aircraft used by the RAF.

## PHOTO FILE

### AVRO SHACKLETON MR



#### ▲ Vintage warrior

The Shackleton showed its wartime ancestry, with Griffon engines derived from the Merlins that powered the Spitfire.

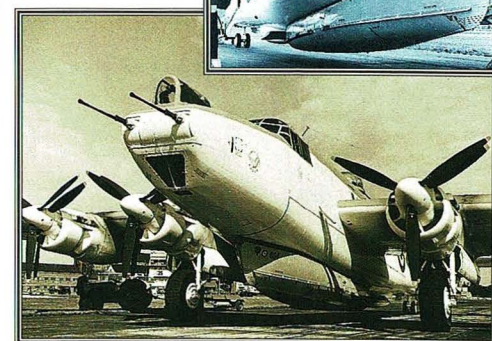
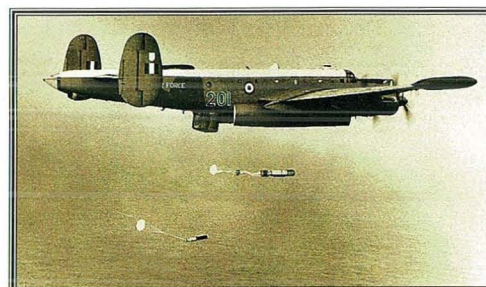
#### ▲ Illustrious descent

The early Shackleton was clearly a descendant of the Lancaster and Lincoln bombers of World War II. It was distinguishable from later models by its rounded nose and mid-upper gun turret.



#### ▲ Radar patrol

AEW Shackletons were still patrolling with the RAF's No. 8 Squadron in 1991, often flown by new pilots who were about half the age of their aircraft.



#### ▲ Flying boat

Some Shackletons carried a large lifeboat for use in the air-sea rescue role. The boat was designed to be dropped close to survivors in the sea, and contained emergency supplies of food and water.

#### ◀ Gone fishing

The Shackleton had a large bomb bay and could carry a devastating load of anti-submarine weaponry, including mines, depth charges, homing torpedoes and, sometimes, two 20-mm cannon.

## FACTS AND FIGURES

- The first Shackleton took to the sky on March 9, 1949.
- On March 22, 1958, a Shackleton made the first flight from South Africa to remote Marion Island in Antarctica.
- Shackletons saw action as bombers in the Radfan campaign of the 1960s.
- The airborne early warning "Shack" was fitted with the World War II-era AN/APS-20 radar scanner.
- The first airborne early warning aircraft flew on September 30, 1971.
- Viper turbojet engines were installed in some Shackleton MR.Mk 3 nacelles.



## PROFILE

# Forty years over the seas

Avro designers under Roy Chadwick began in 1946 to fashion an extremely long-range patrol aircraft, based roughly on the Lincoln bomber, but with a new fuselage of twice the internal volume. Shackletons flew with seven RAF Coastal Command squadrons in a operational career that started in 1951.

Life aboard the "Shack" meant incredibly long, noisy and

uncomfortable missions, knowing that hours of tedium could end with moments of frenzied combat with submarines or warships.

Many improvements were made to this mid-wing, four-engine machine over its long career. Chadwick died in 1947 but engineers under S. D. "Cock" Davies fashioned new Shackletons: some with advanced radar, others with

tricycle landing gear. Added to its roster of duties was airborne early warning, serving as a flying radar station.

The RAF replaced maritime "Shacks" with the jet-powered Nimrod in the 1970s, but South African aircraft continued to fly on into the 1980s, and the radar-equipped early warning aircraft were still watching for aircraft intruding on Britain's airspace as the 1990s began.



The South Africa Air Force (SAAF) was the only export user of the Shackleton, flying eight aircraft around the country's long coastline for many years. The final SAAF Shackleton maritime sortie took place in 1984.

## SPECIFICATIONS Shackleton MR.Mk 2

**Type:** 10-crew maritime reconnaissance and anti-submarine aircraft.

**Powerplant:** Four 2,450-hp. Rolls-Royce Griffon 57A V-12 piston engines.

**Maximum speed:** 310 m.p.h. at sea level.

**Service ceiling:** 21,000 ft.

**Range:** 3,375 mi.

**Maximum endurance:** 21 hr.

**Weights:** Empty 55,783 lb.; loaded 85,822 lb.

**Weapons:** Up to 17,965 lb. of bombs, torpedoes and other weapons; originally, two pairs of Hispano 20-mm cannon in nose and dorsal turret (later removed).

**Dimensions:**

Span	120 ft.
Length	87 ft.
Height	17 ft.
Wing area	1,420 sq. ft.

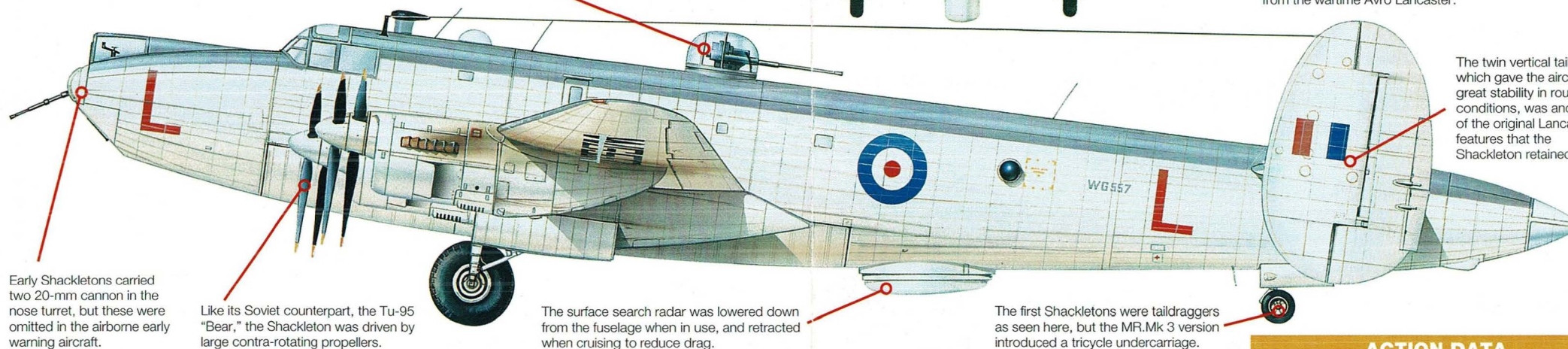
## SHACKLETON MR.Mk 2

WG 557 was one of the second batch of Mk 2 Shackletons. It was delivered to the Royal Air Force's No. 228 Squadron at St. Eval in Cornwall in 1953 and served through the 1950s.

The dorsal gun turret with its twin 20-mm cannon was an anachronism in the missile age. It was removed from most Shackletons in the 1960s.

The Shackleton wing was almost exactly the same as the wing of the Lincoln bomber, itself derived from the wartime Avro Lancaster.

The twin vertical tails, which gave the aircraft great stability in rough conditions, was another of the original Lancaster features that the Shackleton retained.



Early Shackletons carried two 20-mm cannon in the nose turret, but these were omitted in the airborne early warning aircraft.

Like its Soviet counterpart, the Tu-95 "Bear," the Shackleton was driven by large contra-rotating propellers.

The surface search radar was lowered down from the fuselage when in use, and retracted when cruising to reduce drag.

The first Shackletons were taildraggers as seen here, but the MR.Mk 3 version introduced a tricycle undercarriage.

## ACTION DATA

### ENDURANCE

Maritime reconnaissance calls for many things from an aircraft, but above all it requires endurance. Whether escorting a slow-moving convoy of merchant ships, hunting for a submerged submarine or even searching for a missing yacht in the middle of the ocean, the ability to patrol an area of sea for hours at a time is vital.



SHACKLETON



PB4Y PRIVATEER



P-2 NEPTUNE

## Maritime reconnaissance in the 1950s

**CONSOLIDATED PRIVATEER:** Dating from World War II, the Privateer was soon replaced in U.S. service, but it served France well into the 1950s.



**LOCKHEED NEPTUNE:** First flown in 1947, the P-2 Neptune remained a front-line maritime aircraft for even longer than the Shackleton.



**BERIEV Be-6 "MADGE":** Beriev has long been a major flying boat design bureau. The Be-6 was the USSR's main maritime patrol boat during the 1950s.



**MARTIN MARLIN:** Operated by U.S. Navy squadrons from 1951, the big twin-engine flying boat served on ASW and rescue duties until it was withdrawn during the Vietnam War.



**CANADAI ARGUS:** A piston-engine variant of the Bristol Britannia airliner, the CL-28 Argus flew in 1957 and was operational with Canada's Defence Forces into the 1980s.

