BRISTOL SYCAMORE HELICOPTERS FOR THE ROYAL AUSTRALIAN NAVY

Reproduced by permission of the Bristol Aeroplane Co., Ltd.

Three Bristol Sycamore Mark 50 helicopters, which are going into service with the Royal Australian Navy, recently landed together on the flight deck of H.M.A.S. *Vengeance*. The helicopters will be engaged on air/sea rescue and general communications duties.

The aircraft were ordered by the Australian naval authorities for these specialized roles after a Sycamore had successfully completed take-off and landing trials on board the aircraft carrier H.M.S. *Triumph*. These trials, which lasted two days, firmly established the suitability of the machine for use as a carrier-borne aircraft. Conditions varied considerably during the trials period and wind speeds over the flight deck rose at times to nearly 40 knots.

Winds of this velocity impose a particularly severe test on a helicopter at take-off or on landing, and it is the aircraft's performance under these conditions which largely determines its suitability for operation from a carrier. It was, therefore, a particular cause for satisfaction that film records made on board *Triumph* revealed no trace of undesirable rotor behaviour at any time.

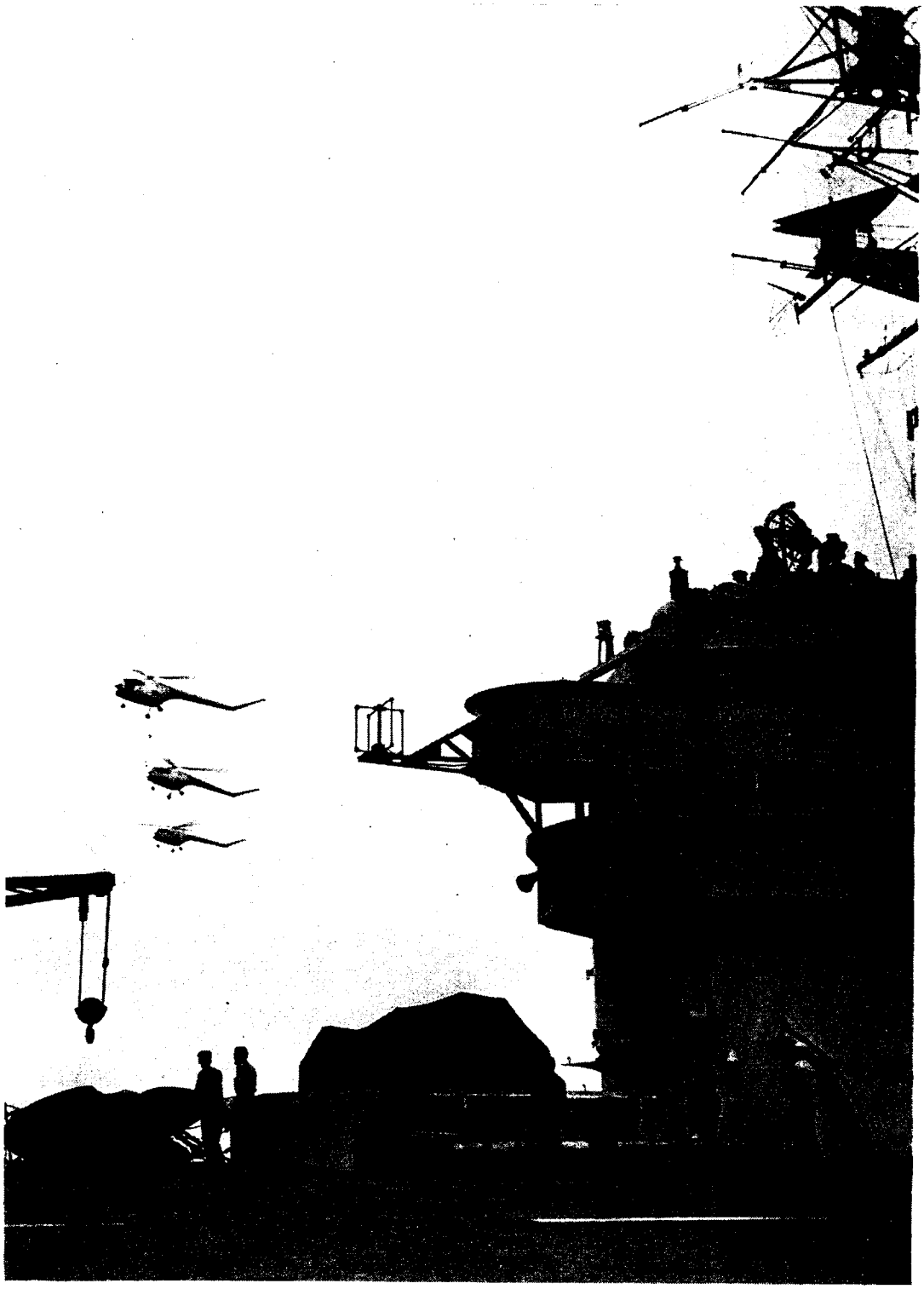
The trials proved also that the Sycamore can be struck down into the hangar in a remarkably short space of time. To simulate operational conditions, the aircraft was recalled to the flight deck from guard duties on the *Triumph's* starboard quarter, the rotor blades were folded, and the machine was lowered to the hangar. The operation was completed in six minutes.

To meet the requirements of naval operation, a number of modifications have been introduced. Air/sea rescue work will be the Sycamore's most important duty in service with the R.A.N., and for this purpose a hydraulically operated winch is mounted abaft an open doorway on the starboard side of the fuselage, power being provided by a pump driven from the main rotor gearbox.

The rescuer, who is lowered in a special harness, secures the rescued man by passing a sling under his armpits, and throughout the operation keeps in touch with the cabin by means of an intercomm extension. Extensive trials have shown that the aircraft remains unusually steady in the hovering position while casualty and rescuer are raised by winch and taken aboard.

To facilitate this operation and to give maximum freedom of movement during rescue work, the door threshold is at floor level. The floor itself is flat and is covered with a rubber tray which prevents sea-water from casualties' clothing draining down into the fuselage structure. In addition, the normal seats at the rear of the cabin are replaced by seats of the folding ' deck-chair ' type, giving more working space for winch operation and taking rescued personnel on board. A quick-release curtain covers the starboard aperture while the aircraft is flying to and from the scene of rescue operations.

A new type of undercarriage gives the aircraft an additional nine inches ground clearance, enabling it to land on rough and uneven surfaces, and raising the height of the main rotor disc during ground running. A side exhaust is fitted to avoid burning or scorching when landing in scrub or on a deck ; instrument panel layout is modified, and an F.24 camera can be installed in the cockpit floor for aerial photography.



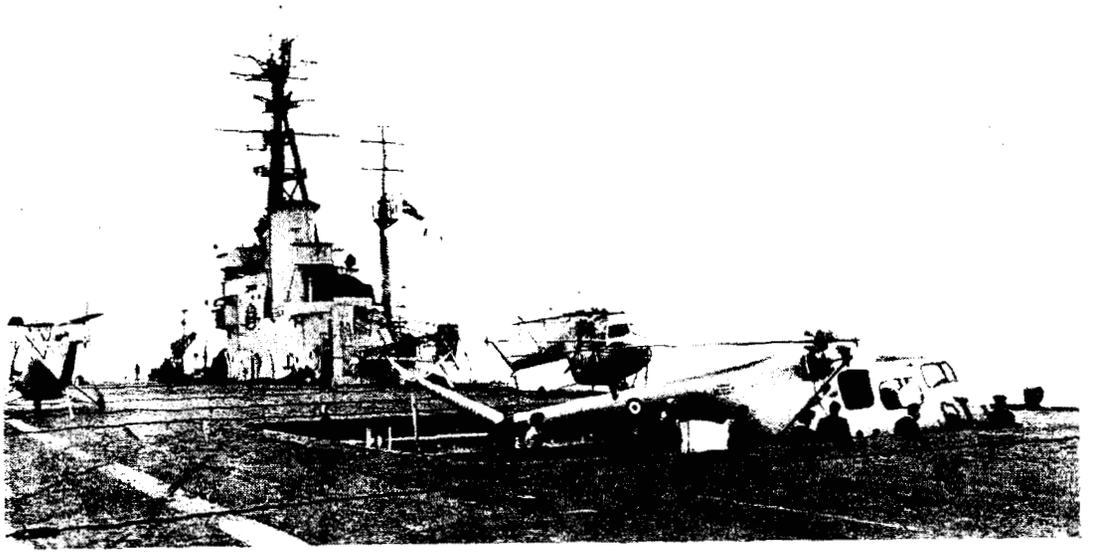
THREE BRISTOL SYCAMORE MARK 50 HELICOPTERS CIRCLING H.M.A.S. 'VENGEANCE' BEFORE LANDING ON

ABOUT TO LAND ON

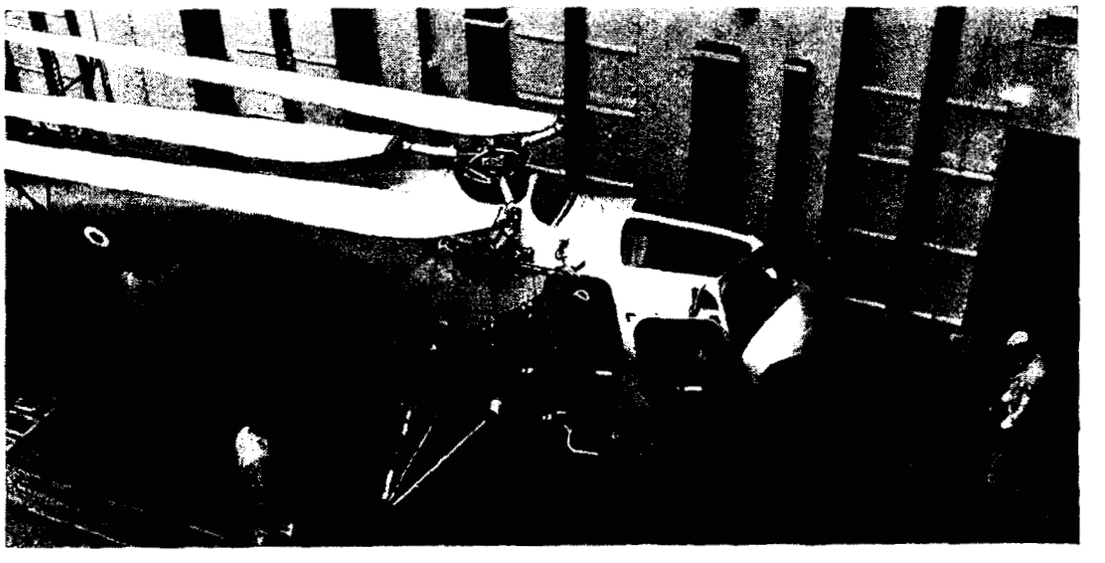
JUST EMBARKED FROM R.N.A.S. GOSPORT

Rescue work with the R.A.N. will not necessarily be confined to operations at sea. The Sycamore may be summoned to the aid of crews whose aircraft have made forced landings in bush country, and although in these cases the aircraft may occasionally be able to land in order to take personnel on board, rescue by means of the winch will frequently be necessary.

By removing the winch and covering the starboard doorway aperture by a metal panel containing a ' knock-out ' Perspex escape hatch, the Sycamore can quickly be converted for operation as a communications aircraft. There



ONE SYCAMORE BEING STRUCK DOWN—THE OTHER TWO STAND BY WITH BLADES FOLDED



A SYCAMORE REACHES HANGAR LEVEL BY LIFT

s little room for doubt that the overall versatility of the aircraft will enable t to undertake a wide variety of duties and discharge them more effectively han would otherwise be possible. In operation with a task force the machine nay prove particularly valuable as a transport for officers attending operational conferences and as a means of swiftly provisioning escorts.

The Sycamore may also prove most effective—as was demonstrated during the trials on board *Triumph*—when undertaking plane-guard duties. Experience may in fact show that this type of machine is quite capable of replacing the destroyer which normally accompanies a carrier for this purpose. Such a change of naval aviation practice could have a profound effect on peace-time economy, for it would free for other, and perhaps more important action, the ships so engaged.