

M.A.R.T.S.U.

BY

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Introduction

The Royal Navy's Mobile Aircraft Repair Transport and Salvage Unit (MARTSU) is located at H.M.S. *Daedalus*, Royal Naval Air Station, Lee-on-Solent. MARTSU was formed at Lee-on-Solent in 1959 with the amalgamation of the Naval Aircraft Transportation Unit and the Mobile Aircraft Repair Unit. Initially involved only with R.N. aircraft, the task was broadened in 1972 and the unit assumed a tri-service responsibility for all U.K. military helicopters. It is responsible to the Flag Officer Naval Air Command (FONAC) at R.N.A.S. Yeovilton. As its formal title indicates, MARTSU looks after the structural repair, transportation, and salvage of all Royal Navy, Royal Marines, Royal Air Force and Army Air Corps helicopters on a world-wide basis. To do this it is divided into two sections: one deals with the helicopter repairs and R.N. aircraft surveys, and the other with salvage and transportation.

Repair Section

The Repair Section deals with all incidents of structural damage to any military helicopter, however it may have been caused, and which may for any reason be beyond the repair capability of the user unit (Repair Category 2 or 3). Operational units make contact with MARTSU by signal in the form of a Request Categorization, giving initial information regarding the severity of damage to the aircraft, its location, and whether it is still airworthy. The unit responds, normally within 24 hours, by despatching a Repair Officer (one of 5 lieutenants) to the location to view the aircraft. He



Drawing by Graham Foster, MARTSU

makes the initial assessment of the damage, taking notes, rubbings, and photographs as appropriate and returns to the unit for in-house discussions.



Drawing by Graham Foster, MARTSU

With this information to hand, the unit specialists scheme the full repair. If it is beyond on-site repair they will advise FONAC Staff accordingly who will then arrange recovery of the aircraft to a major servicing unit. It may be necessary for MARTSU to liaise with the Design Authority (manufacturers) to obtain clearance for individual repair schemes or, on occasions, ask the firm for assistance to scheme the repair. Either way, once this has been agreed, the repair kit and tooling will be assembled, and repair teams briefed on the individual repair task. Teams are then despatched to the aircraft location to carry out the repair in the shortest time possible by working an extended day routine, including weekends, until the task is complete. At the time of going to print, MARTSU had repair teams scattered widely throughout the British military scene—at all but one of the R.N. Air Stations in U.K. and at R.N.A.Y. Wroughton, R.A.F. Odiham, R.A.F. Finningley, Northern Ireland, and the Falklands. Teams were also preparing for imminent departure to R.A.F. Sek Kong (Hong Kong) and Army Workshops Detmold (Germany).

The 1982/83 statistics (April to April) are an indication of the unit's involvement in tri-service repair activities. In the Category 3 (heavy repairs) content, nearly 40 000 man-hours were spent on task, of which 23 000 were on R.N. helicopters, 13 000 for the R.A.F., and 3800 for the Army Air Corps. In Category 2 (user unit assistance) a total of just over 12 500 man-hours were recorded of which 8000 were for R.N., 4000 for R.A.F., and a little over 500 man-hours were spent on Army helicopters.

During this period the same technician workforce was used to carry out some 208 routine integrity surveys on R.N. fixed and rotary wing aircraft. R.N. aircraft surveys are carried out on site, with the user having brought the aircraft to the required minimum strip condition. The survey reports are sent to FONAC's Staff Officers who monitor the overall fitness of individual aircraft to remain in the operational fleet. An aircraft will only be withdrawn if it is clear from its condition that the work load for the repair, reconditioning, replacement of major components, and up-dating of modification state is warranted and is beyond the economic capability or capacity of the parent unit or squadron.

Transport Section

MARTSU is also responsible for tri-service helicopter salvage on a world-wide basis, with the exception of north-west Europe, which is an R.A.F. responsibility. With the use of a wide range of specialist rigs and the provision of experienced non-technician senior ratings, any Service helicopter which has any kind of damage or major unserviceability can be recovered and transported by road (FIG. 3). The unit is also responsible for the transportation of all Service helicopter aero-engines and marine gas turbine engines between FONAC-administered repair organizations and operational units within Europe. Last year (April 1982-1983) the unit vehicles recorded about 700 000 vehicle-miles, involving some 250 helicopters, more than 200 marine gas turbines, 2 200 aero-engines and 1500 miscellaneous loads being transported between the operational units, Naval Aircraft Repair Yards, ports and depots throughout the U.K.



FIG. 3—R.A.F. CHINOOK HELICOPTER BEING TRANSPORTED BY MARTSU

The more interesting extracts from the unit's diary of events during 1982/83 are summarized in TABLE I.

TABLE I—Some of the work of MARTSU, 1982-1983

Date	Location	Event	Remarks
April 82	UK	R.A.F. Puma, flying accident	On-site repair to change frames and skin structure. 1106 man-hours.
April 82	S. Atlantic	Naval Party 1220	Team of 4 Senior Rates to <i>Hermes/Invincible</i> to brief squadrons on Battle Damage Repair Techniques (BDR).
		Naval Party 1840	Repair Officer and 12 technicians set up aircraft repair facility in <i>Atlantic Conveyor</i> . Carried out BDR on aircraft in Total Exclusion Zone until ship lost.

April 82	S. Atlantic	Naval Party 1990 Naval Party 2140	Set up aircraft BDR facility and sailed in <i>Atlantic Causeway</i> . Repair Officer plus 14 technicians set up aircraft repair facility in M.V. <i>Astronomer</i> to replace facility lost in <i>Atlantic Conveyor</i> .
June 82	Belize	R.A.F. Puma, damaged by severe tropical storm	Aircraft salvaged by MARTSU; returned to U.K. in R.A.F. Hercules; subsequently repaired by MARTSU at R.A.F. Odiham: 568 man-hours.
Aug 82	Devonport	18 helicopters return from Falklands in <i>Tor Caledonia</i>	Helicopters received at dockside, prepared, loaded, and transported by road to various locations in U.K.
Sept 82	Queens Flight	R.A.F. Wessex, cockpit sliding windows support structure	Worn structure replaced on-site by embodiment of Wessex Mod 1982: 1077 man-hours.
Sept 82	UK	6 Army Air Corps Scouts to be transported from Netheravon to RNAY Wroughton.	All 6 helicopters collected, loaded, and delivered in 2 days.
Nov 82	Belize	Wasp, flying accident	Aircraft salvaged by MARTSU. Air transported by R.A.F. Hercules to U.K. Road transported from Lyneham to RNAY Fleetlands.
Dec 82	Devonport	11 Wessex, 1 Chinook, & 1 Huey helicopter returned from Falklands in M.V. <i>Astronomer</i>	All aircraft received at dockside, moved to parking area for disassembly before road transportation to various locations in U.K. Task completed in 7 working days.
Jan 83	UK	R.N. Sea King Mk. 5, structural fatigue	Major frames and structure replaced by MARTSU: 1882 man-hours.
Feb 83	Detmold	10 Army Air Corps Lynx helicopters to be modified in Germany and 6 at RNAY Wroughton	Completed by MARTSU on-site.

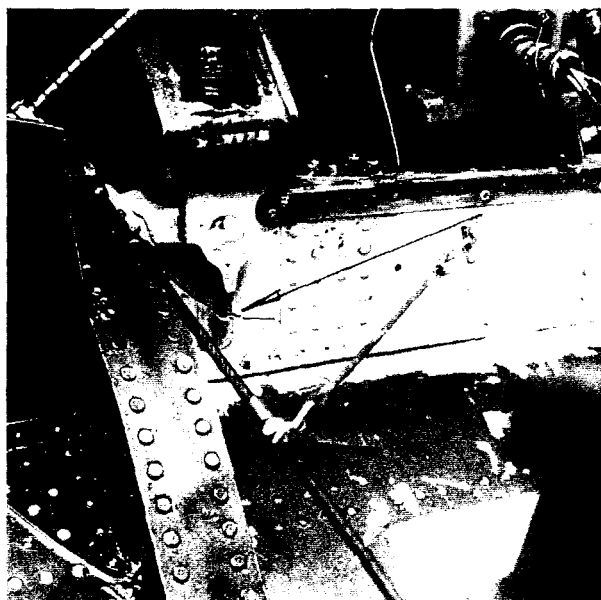


FIG. 4—SEA KING: STARBOARD REAR MAIN GEARBOX SUPPORT CASING CRACKED

Feb 83	Norway	R.A.F. Puma, flying accident	Damaged helicopter surveyed on-site, recovered by R.A.F. Chinook/Hercules to U.K. Repaired by MARTSU at R.A.F. Odiham: 1166 man-hours.
Mar 83	Bardafoss (<i>Invincible</i>)	R.N. Sea King, structural fatigue	Structure replaced on-site: 393 man-hours.
Mar 83	Falklands	R.A.F. Sea King, major structural fatigue	MARTSU schemed repair embodied on-site: 700 man-hours (Fig. 4).
Mar 83	Falklands	Army Air Corps Gazelle, under-carriage collapse	MARTSU schemed repair embodied on-site: 710 man-hours (Fig. 5).
April 83	Hong Kong	2 R.A.F. Wessex ageing of airframe structure	Restored on-site by embodiment of Wessex Mods 1982 and 1724: 1340 man-hours.
May 83	Falklands	2 R.A.F. Chinooks, structural fatigue	Damage surveyed in Falklands: on-site repair not possible. Returned U.K. by sea, road transported from Barry docks to R.A.F. Odiham by MARTSU. Currently being repaired by MARTSU at R.A.F. Odiham.
May 83	Mayport (<i>Hermes</i>)	R.N. Sea King, structural fatigue	Structure replaced by MARTSU on-site: 206 man-hours.
June 83	Falklands	2 R.A.F. Chinooks, structural fatigue	MARTSU schemed repair carried out on-site: 675 man-hours. 4 more Chinooks similarly being reinforced on-site.

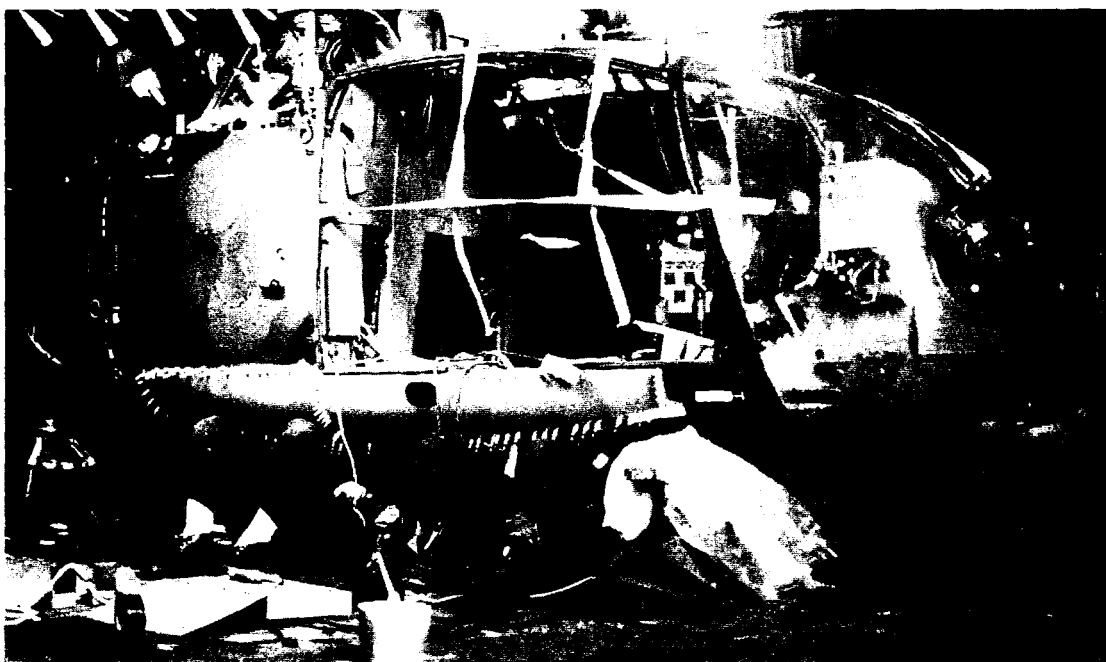


FIG. 5—ARMY GAZELLE HELICOPTER BEING REPAIRED BY MARTSU UNDER OPERATIONAL CONDITIONS IN THE SOUTH ATLANTIC