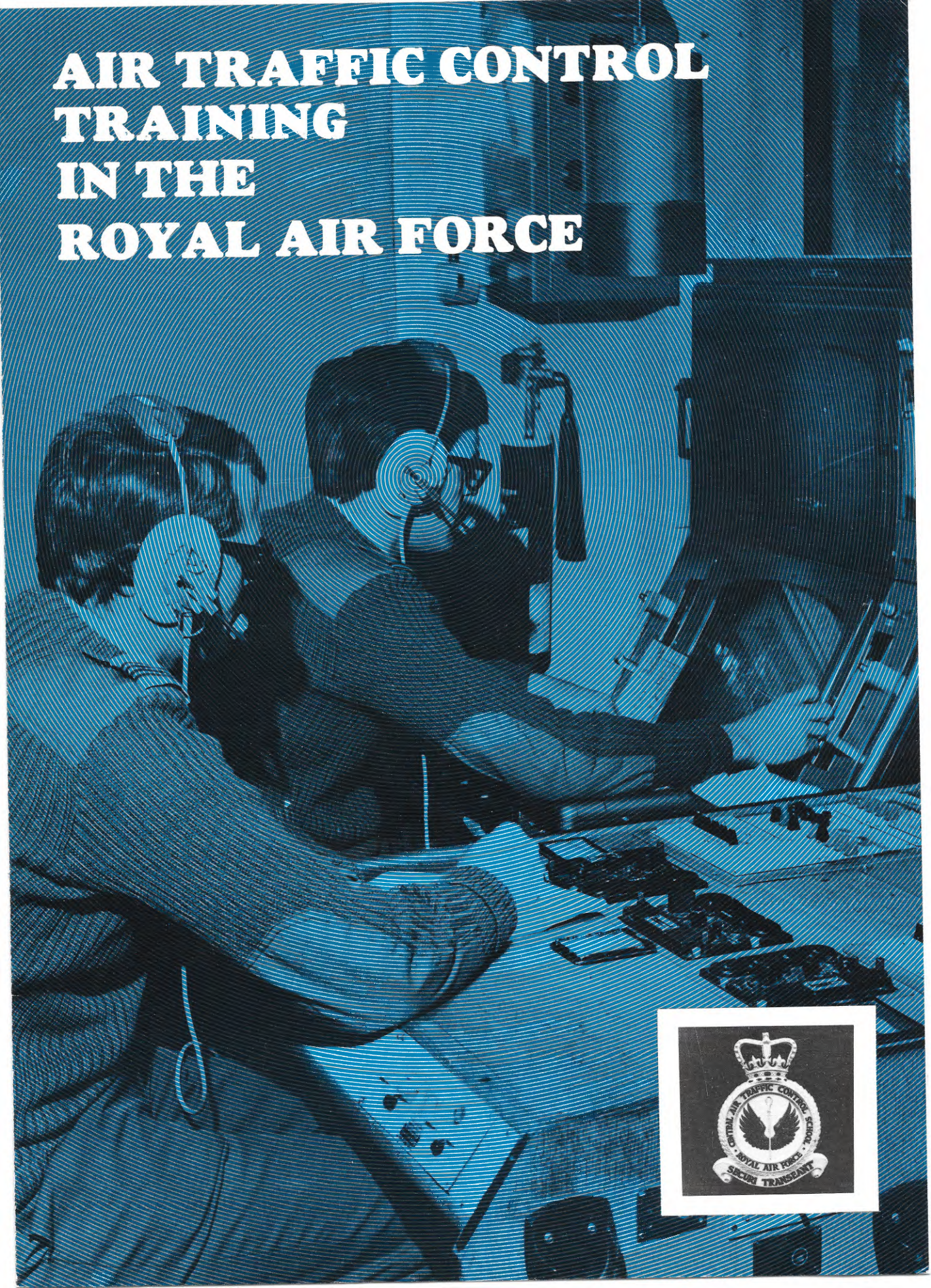
AIR TRAFFIC CONTROL TRAINING IN THE ROYAL AIR FORCE



JOINT AIR TRAFFIC CONTROL COURSE

Shawbury Tower

The aerodrome controller coordinates the flow of traffic taxying, taking-off and landing.

Shawbury, Aerodrome Control position

The approach controller directs and sequences incoming traffic, using either cathode ray direction finding or radar equipments, into the areas controlled by the radar director or the aerodrome controller.

Shawbury, Approach Controller

The radar director directs aircraft on to the extended runway centre line at a range of about 10 miles from touchdown. He then hands the aircraft to the talkdown controller who can see the height and position of the aircraft in relation to the runway, and directs the aircraft along the ideal approach path until the pilot can see the runway and make his landing.

Director and Talkdown Controllers

AIR TRAFFIC CONTROL TRAINING IN THE ROYAL AIR FORCE

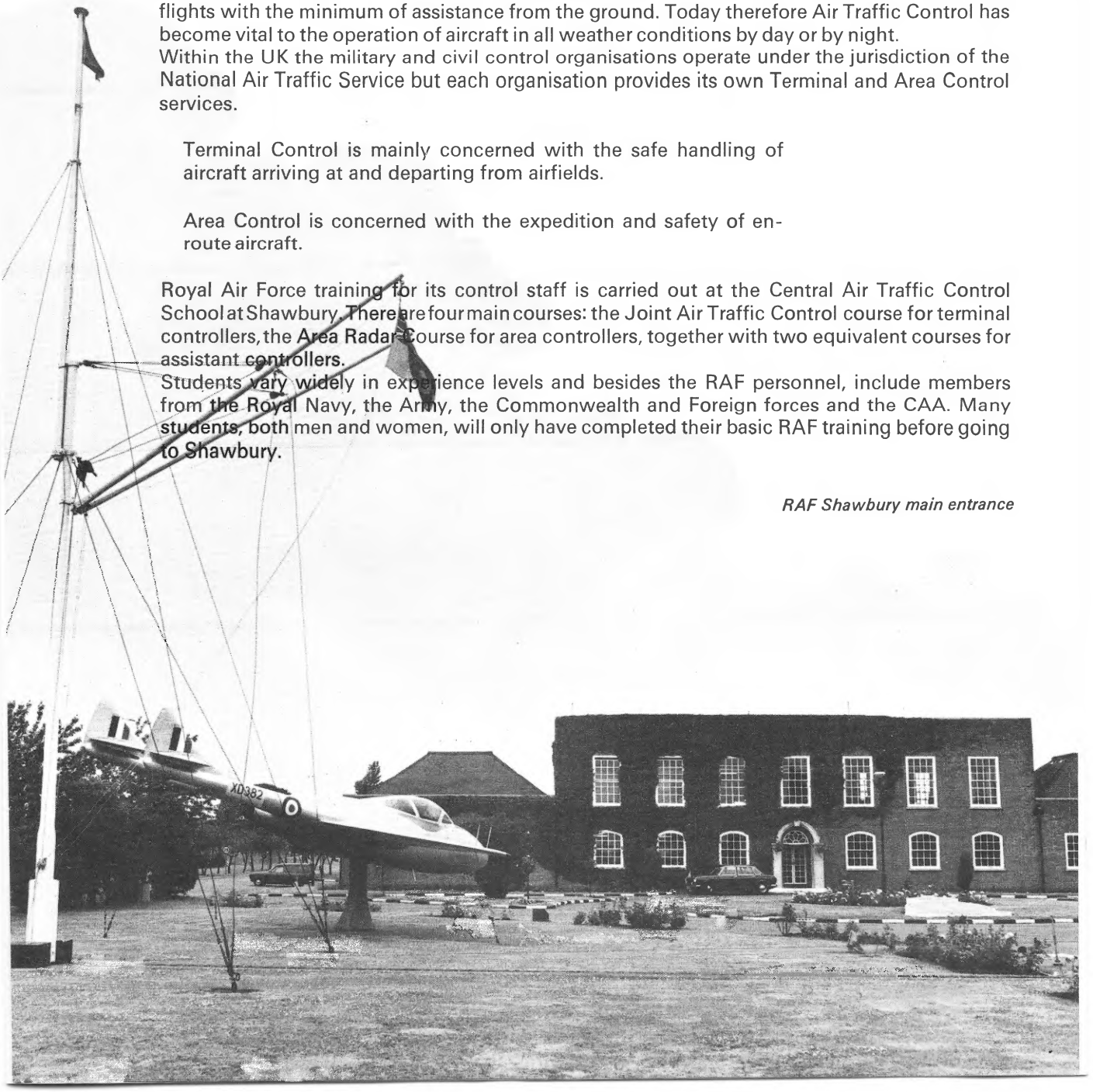
In a country as small as the United Kingdom there are many demands upon the airspace above it. Most civil aircraft operators require routes that will allow the safe and expeditious flow of their traffic whereas much of the military traffic requires a large degree of tactical freedom. Add to this the fact that many modern aircraft, both military and civil, are highly complex machines having limited cockpit visibility and yet are travelling at speeds in the region of a mile every 6 seconds, and it becomes apparent that the days are long gone when pilots controlled their flights with the minimum of assistance from the ground. Today therefore Air Traffic Control has become vital to the operation of aircraft in all weather conditions by day or by night.
Within the UK the military and civil control organisations operate under the jurisdiction of the National Air Traffic Service but each organisation provides its own Terminal and Area Control services.

Terminal Control is mainly concerned with the safe handling of aircraft arriving at and departing from airfields.

Area Control is concerned with the expedition and safety of en-route aircraft.

Royal Air Force training for its control staff is carried out at the Central Air Traffic Control School at Shawbury. There are four main courses: the Joint Air Traffic Control course for terminal controllers, the Area Radar Course for area controllers, together with two equivalent courses for assistant controllers.
Students vary widely in experience levels and besides the RAF personnel, include members from the Royal Navy, the Army, the Commonwealth and Foreign forces and the CAA. Many students, both men and women, will only have completed their basic RAF training before going to Shawbury.

RAF Shawbury main entrance



The 13 week Joint Air Traffic Control Course is designed to teach students the techniques of all four terminal control functions: aerodrome control, approach control, radar director and radar talk-down.

With a course of this nature having a wide cross-section of students, it is not possible to assume any previous level of aviation knowledge. Those new to the aviation environment undergo a three week lead-in course to familiarise them with the handling of aircraft and with the pilot's point of view, as well as the 'language' that is part of the normal parlance of ATC but which can be incomprehensible to the newcomer.

The emphasis of the main course is placed on practical training but even so there are some 170 hours of lectures and examinations covering such subjects as the Theory of ATC and Radar, Meteorology and Navigation. Examinations in these subjects take place in the first nine weeks of the course thus enabling the last four weeks to be devoted exclusively to advanced practical training.

The bulk of the practical training is carried out in simulators since they allow the intensity and complexity of exercises to be carefully controlled without the students being restricted by bad flying weather, aircraft unserviceabilities or the constraints of flight safety. However, experience has shown, that no matter how realistic the simulator, the control of 'live' aircraft is still a large psychological step for the student and for this reason each student is allocated 13 hours of 'live' controlling, with Shawbury based Jet Provost aircraft.

Jet Provost trainer

By the end of the ninth week, students will have completed their basic Aerodrome and Approach Control training and will progress to the advanced exercises. They will use the advanced simulators which are replicas of the AR1 search radar and the Precision Approach Radar, as used in Shawbury Control Tower.

JATC advanced simulator

The exercises become progressively more difficult, presenting students with realistic and complex situations, so that by the time they graduate the students will have carried out some 158 hours of controlling and will have dealt with traffic densities and complexities comparable with experienced controllers in the field.

AREA RADAR COURSE

Since an area radar unit may be tasked to provide services over an area as large as the whole of the South of England, controllers must be capable of operating very high powered, long range radars. The Shawbury Area Radar Course, therefore, teaches controllers the techniques of controlling aircraft in high density situations at extreme range. This, however, could be a very costly and dangerous situation, and so all practical training is carried out on a simulator.

The Shawbury simulator has as its nerve centre a digital computer capable of simulating up to 74 aircraft simultaneously on the control screen.

Area Radar Control Room (ARTS)

Fifty aircraft fly according to pre-programmed flight plans as background tracks and 24 are controlled in real time by students sitting at six control positions. The controllable tracks are 'flown' by assistant air traffic controllers who operate the Aircraft Control Units. (ACUs).

All students are experienced terminal controllers and, although the $5\frac{1}{2}$ week course is essentially a practical one, there are 44 hours of lectures and examinations.

ACU operator

During the practical training, students learn to keep aircraft under their control, separated from other traffic, how to deal with various aircraft emergency situations, how to give navigational assistance and how to assist pilots climbing out from or returning to airfields. Just some of the services offered to both military and civil aircraft by the RAF Air Traffic Control Radar Units.

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ASSISTANT AIR TRAFFIC CONTROLLER TRAINING

At all air traffic control units in the RAF, controllers are supported by a team of Assistant Air Traffic Controllers (AATCs). These assistants may be male or female and are generally recruited into the Service under the Adult Entry Scheme. They perform a variety of duties that include switchboard operator, operations clerk, flight planning clerk, controllers assistant and many others and the Trade Training and Standards Squadron at Shawbury is responsible for their basic air traffic training. The course lasts six weeks and the syllabus includes air traffic control theory, navigation, meteorology and signals. Practical training takes place in the last two weeks of the course when students undergo various exercises in the simulators and gain 'live' experience in the Shawbury Control Tower and Runway Caravan.

The duties performed by AATCs in area radar units are such that additional specialised training is required for those posted into this environment. The students will normally have already had some experience in air traffic control and so a one week familiarisation course has been found to be sufficient. The Shawbury Area Radar Training Squadron undertakes the training, which includes both theory and practical simulator exercises.

AATC simulator

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