each carry their own reserve of maps, so as to be in a position to meet all immediate emergencies.

Establishment of Signals Communications and Radar Cover.

475. The extent to which efficient signals communications enter into the successful launching and controlling of an air operation is never fully realised until by some chance these facilities fail. That the channels of signals communications satisfied the bulk of our complex needs during the course of the operation was due to the careful preliminary planning, as well as to the training of operating and maintenance personnel. Few difficulties arose until the break-out from the beach-head and the rapid moves forward of the air forces.

476. The planning of the W/T and R/T organisation for point-to-point communications was necessarily undertaken many months in advance of the actual assault, and was on a carefully co-ordinated United States and British inter-service basis.

477. The communications required were divided broadly into two categories:—

(*a*) tactical communications, and

(*b*) strategical communications.

478. The tactical communications were essentially operational channels required for use mainly during the assault phase, to be operated from the Combined Control Centre and Executive Control Centre to the Assault forces, the Headquarters ships and the Fighter Direction Tenders. The strategical communications were those to be used between Air Force Headquarters on the Continent and in the United Kingdom. These communications included a number of administrative channels.

479. It was decided to plan and to provide sufficient W/T communications to enable all traffic to be handled irrespective of such landline or cable circuits as might be provided. In order to handle rapidly large volumes of signals traffic, a number of high speed auto W/T mobile signals units were formed for operation on the main operational and administrative links between the Continent and the United Kingdom.

480. The British Second Tactical Air Force and the United States Ninth Air Force planned their own communications forward of their Headquarters. The communications rearward from these Air Forces were planned by A.E.A.F. and were the main operational and administrative links to the United Kingdom. As a result of a survey of traffic passed over the main W/T links in the North African theatre, it was decided that operational signals traffic should be handled separately from administrative traffic.

481. The implementation of the signal plan necessitated the building of a number of new W/T stations in the United Kingdom and the development of others. No less than two transmitting and four receiving stations were constructed, while a further five mobile transmitting stations were introduced. In addition, three transmitting and three receiving stations were enlarged and developed.

482. For W/T communications, five static and two mobile R/T transmitting and receiving sites were set up and put into operation at points along the South Coast. On the Continent, the R/T channels were provided by Mobile Signals Units, which worked on both Simplex and Duplex circuits; also Radio/Teleprinter facilities were provided for operation in addition to, and simultaneously with R/T.

483. During the assault, all the forward units, in Headquarters Ships and Fighter Direction Tenders, as well as terminal units on the far shore such as G.C.I. stations and even smaller units, including Beach Squadrons, successfully opened communications as planned. There was some slight interference experienced on some channels early in the operation, but this was quickly overcome and a remarkably high standard of operation was maintained.

484. In addition to the limited Radar cover given by the Fighter Direction Tenders, a plan to provide complete Radar cover over the beach-head was set in motion on D-Day. Two complete G.C.I. stations were among the first equipment to follow the original assault forces ashore.

485. One of these G.C.I. stations was landed at mid-day on D-Day and proceeded to a prearranged site. By nightfall, two of its pieces of equipment were working, together with its V.H.F., R/T, Air to Ground and D/F channels, and from 2230 hours on D-Day, night fighters were controlled from this station.

486. The second G.C.I. station suffered severe losses, due to being landed on a beach not cleared of the enemy. There were about 40 casualties, some of which were fatal and most of the unit's communication and Radar equipment was lost. Despite these setbacks, the one Radar equipment salvaged was set up and moved to its correct site, where it commenced operating with borrowed R/T equipment on D + 4. The aircraft controlled during this first night made a number of contacts, most of them friendly, but one enemy aircraft was destroyed and one damaged.

487. By 20th June (D + 14), no less than four G.C.I. type stations, one C.O.L. station, five F.D.P's and five Light Warning sets were in operation in the beach-head area. The Radars had all been set up at pre-selected sites that had been chosen by the Operational Research Section from maps and photographic cover. That these stations were sited so well is not only a tribute to the research workers, but also to the air reconnaissance that supplied the detailed material for their work.

488. One unsatisfactory feature of signals communications arose in relation to the major operational and administrative headquarters after operational units began to move forward behind our advancing troops. On a number of occasions, both Headquarters, Second Tactical Air Force and United States Ninth Air Force lost touch temporarily with some of their units as also did Advanced Headquarters, A.E.A.F., with Stanmore. Moreover, after the move of my main headquarters to Julouville in September, where it set up alongside your Advanced Headquarters, I did not have adequate telephone or signals communications with my Advanced Headquarters or the Headquarters of the two Tactical Air Forces. I was much in the dark about what was going on and the co-ordination of the air effort became extremely difficult. The position did not