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PUBLIC WORKS & UTILITIES, S/C GENERAL REPORTS
SEPT. 1943 - JAN. 1945

REAR ADMIRAL E.W. STONE
CHIEF COMMISSIONER A.C.

PUBLIC WORKS AND UTILITIES

Sub-Commission

ANNUAL REPORT 1944

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HEADQUARTERS
ALLIED COMMISSION

A.P.O. 394

Public Works and Utilities Sub-Commission

ANNUAL REPORT 1944
(and from Sept. 1943)


L.A. JENNY,
Colonel, C.E.,
Director.

ANNUAL REPORT 1944
(and from Sept. 1943)

L.A. Jenny
L.A. JENNY,
Colonel, C.E.,
Director.

G.F. Rhodes
G.F. RHODES,
Lieut-Colonel, R.E.,
Deputy Director.

Rome
31st January 1945

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ANNUAL REPORT

FOREWORD

This brief summary of accomplishments of the Public Works and Utilities Sub-Commission A.C. for the year 1944 is dedicated to the officers, enlisted men and civilians who during the period of September 1943 to January 1945 have been members of the staff of this Sub-Commission, either at Headquarters or in the Regions.

We often praise the deceased for gallant and worthy performances during their active lives, but we are too prone to forget to say a few words of appreciation while they are still among us, and can hear from our own lips the fact that we do appreciate them and their valiant efforts.

Then too, histories are often written by the men who were present at the clearing up of the rubbish of the completed structure, telling in flowing terms of the heroic work performed in that last little effort; but completely ignoring, or even minimizing, the superhuman effort of those who were present at the corner-stone laying and the actual building of the structure itself. It is to this last group of men, who prescribed the organization and the ingredients required thus to build a solid and homogeneous structure as a whole that would withstand the onslaughts of the elements and the ravages of war, or who through long and toilsome days have given unselfish contribution in brains, sweat and toil to the sound erection of this structure, that the greatest praise is due. It is to these men that we dedicate this all too brief review of accomplishments and say to them: Good and faithful servant, enter thou the

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The task of an A.C. Public Works officer has been anything but a bed of roses. His path has been strewn with untold obstacles of every kind and description. As the Armies advanced he found a down-trodden, dejected, and disillusioned mass of humanity reeling out for the end of the rainbow, and a gigantic mass of twisted structures and rubble.

Continued.....

It was his high task to breathe the breath of life into this inert and incongruous mixture of human flesh and stone, thereby recreating a vital living organism and of instilling into the people a hope eternal of a better life to come. It is my firm belief that A.C., itself a noble experiment in international collaboration, has succeeded beyond peradventure and in spite of the tremendous obstacles encountered. This success has been due in no small measure to the valiant support of the men whose task has been the physical restoration of the structural wreckage without which those sections of A.C., who had to deal with the moral and spiritual restoration of Italy, could not have succeeded.

It is to these men that I wish to extend the sincere appreciation of myself, my immediate staff, and of the superior officers of A.C., whose continuous help and cooperation has made our common success possible.

In closing I wish to extend to all my very best wishes for 1945, hoping that the close of the year will find us all back at our respective homefires.

L.A. Jenny
L.A. JENNY,
Colonel, C.E.,
Director.

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HEADQUARTERS ALLIED COMMISSION

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Public Works and Utilities Sub-Commission

ANNUAL REPORT 19441. General observations.

(1) Although this report is headed "Annual Report 1944", and indeed that year covers its main activities, it is advisable to include in it a previous period of about 3 1/2 months of the year 1943.

A total of about 15 1/2 months is thus covered, and this may conveniently be divided into three parts as follows:-

- (a) September - December 1943 : Formative.
- (b) January - March 1944 : Organisational and Operational.
- (c) April - December 1944 : Operational.

The March-April date is more or less arbitrary, and the periods overlap to some extent.

The formative, or preliminary period, was spent at Tizzi-Couzou in Algeria (N.-Africa) and at Palermo; the second was spent at Naples; and the third at Naples and Rome.

During the first period, with the exception of Sicily, the various Regions as such did not exist, and contact with Engineer Officers working in Sardinia, and on the Mainland as far north as Naples scarcely existed, save that there were a

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During the first period, with the exception of Sicily, the various Regions as such did not exist, and contact with Engineer Officers working in Sardinia, and on the Mainland as far north as Naples scarcely existed, save that there were a few direct dealings with officers stationed in Sicily. In the second period contacts extended widely, coincidentally with frequent meetings with senior Army officers of the Corps of Engineers (American) and of the Royal Engineers (British). Such meetings were, at that time, exclusively directed to the taking over of engineering tasks from Military Districts Nos. 1, 2, 3, (Lines of Communication), from the Chief Engineer, P.B.S., and later from the Chief Engineer, Fifth Army. By March 1944 an extensive and largely centralised organisation had been built up for their execution.

(ii) Allied Commission (Assumption of control).

Regional Engineers (do do).

By reason of the nature of the tasks, and the fact that the Allied Commission H.Q. had no effective control of Regional activities in the way such control developed later, Regional Engineers (to give them the designation they now have) did not take direct instructions from the Sub-Commission. Following a conference held at Naples on 14th April 1944 the Chief Commissioner, General MacFarlane, made the position of Sub-Commission clear to all Regional Commissioners (as now designated) and requested their full co-operation. It was not until some weeks after that date that the Sub-Commission was able to function adequately, and to direct the work of Regional Engineers with some degree of authority.

In the early part of the third period, therefore, preliminary contacts were made with senior A.M.G. Engineer Officers in various parts of the Mainland, south of Naples down to Calabria and in the Islands, leading to a conference at the Sub-Commission's offices in Naples early in June. These officers had been working, some of them for periods of many months, largely as independent units following no particular uniform procedure or policy, subject to no technical control, and with financial responsibilities ill-defined. In general they had done what they could to meet the demands of the Armies on Military Works, meeting also the wishes of senior A.M.G. Officers in whose areas they happened to be, and dealing with local Genio Civile Officials (Italian Public Works Department) in the way that seemed to them immediately expedient. At the same time they had handled repairs to bridges, buildings, water, gas and electricity undertakings, and many other urgent things on which both the Armies the civil population depended, these affecting also the operations of numerous Public Utility companies. Following the conference, and actually as from 15th June 1944, there was a large measure of decentralisation of the Sub-Commission's

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(iii) Sicily. (Conditions and personnel).

In Sicily and elsewhere, where combat operations coupled with deliberate later action by the enemy had caused wide-spread destruction, A.M.G. Engineer officers were so few that extensive reconstruction works were often initiated by Civil Affairs officers (American or British) without technical knowledge, and many "legacies" taken over were, in consequence, onerous and difficult. Officers assigned exclusively to engineering activities numbered in Sicily only a bare half-dozen, and even these were part of a team which concerned itself with functions such as road and rail

transportation, telegraphs, telephones, and other incidental things. Inspection tours through the Island revealed, in fact, that projects of considerable complexity and involving an expenditure of untold millions of lire were in the hands of a Genio Civile organization that was not at that time 25% efficient (even compared with its normal standard), and that such supervision as was accorded, if any, was in the hands of busy Civile Affairs officers who had innumerable other things to attend to, and in any case had neither the knowledge nor the training to prevent wastage of man-power, materials, and money. In Agrigento, Syracuse, Catania, and Messina provinces, for example, for about six months considerable programs of Public Works (repairs, reconstruction, and even re-housing) were carried out under the supervision, such as it was, of British or American officers whose previous training had been financial, legal, police, political, or purely administrative. At the same time the few Engineer officers were coping with heavy demands made on them by the three Armed Services, and principally by H.Q. No. 1 District (Military) at Catania, which required them to put in hand numerous projects, probably 80% of which were on roads and bridges.

(iv)	<u>Military Works</u>	} respective priorities.
	<u>Civil Works</u>	

Having regard to the fewness of their numbers, the extraordinary difficulties of travel by road or rail, the almost complete lack of communications by letter, telegraph or telephone, and the dissipation of resources that was undoubtedly taking place all over the Island, it should be put on record that these officers never failed to keep in mind the cardinal principle "Requirements of the Armed Services are first, and their lists of priorities take precedence over all others". That principle continued to be upheld by the Sub-Commission throughout the year, and at the end of it was still being impressed on Regional Engineers and their staffs, equally with all Italian Governmental agencies, from the

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the rest. The Sub-Commission refused permission, observing that in England some three years previously the Bishop of Coventry had, at his own special request, been enthroned amid the ruins of his Cathedral, bombed by the Germans in November 1940.

Numerous other similar cases occurred, though perhaps of lesser interest and importance.

(v) Primary considerations (projects).

Bridges, power and pumping-stations, are more important than churches or colleges; and of over-riding importance always those roads and bridges, those pumping and power stations and the rest, that may (a) be specifically required by the Armies to assist their advance, (b) to consolidate lines of communications in their rear, and (c) for such needs as may guarantee to the Army Commander a minimum of unemployment and unrest amongst the civil population.

(vi) Sicily (lack of control and shortage of personnel).

With war-damage on such a scale over large areas of Sicily, and with Engineer officers in number not more than one-tenth of those that should have been immediately available after the invasion, it is not surprising that the Island as a whole presented the picture of an incoherent mass of reconstruction schemes that had been embarked on with little regard to intrinsic urgency or priority, with practically no technical control, and certainly with no consideration as to who would eventually pay for them. The still smaller nucleus of Public Works officers left behind in Sicily, as the tide of war moved northwards up the Mainland, was in fact largely occupied in closing down innumerable projects and later trying to establish the original authority for them (if any);

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(vii) In Region 2. (H.Q. Bari) there had been no Public Works Officers, and there was little progress in any direction save that the District (Military) had been giving orders to the Genio Civile, and they had complied to some extent. Months had passed without the establishment of uniformity or control.

(viii) Region 3. (H.Q. Naples) had a few Officers who had arrived immediately after the Salerno landings, and these found themselves at once engulfed in every kind of emergency reconstruction work consequent on the pressing need to restore

the Port of Naples service, and other smaller adjacent ports such as Castellana, Bayoli, and Salerno. Both the Army and the Navy made demands and these had to be met at the same time as the carrying out of demolitions, debris clearance, and a partial restoration of public services, (gas, water, electricity, and sewerage) to meet the immediate needs of the population of a great city, and its surrounding districts. A million people demoralised and disillusioned, hungry and unemployed, and facing the winter in a half-wrecked City: this was the picture.

(ix) Region 4. (H.Q. Rome) was not established till June 1944, following liberation of the Capital. A small team of P.W. Officers was immediately available, having spent many months at Naples in preparatory work, studies of probable conditions, and planning. Their number soon had to be doubled, and later doubled again as the task proved to be so heavy.

(x) Region 5. (H.Q. Foggia) had been operating on lines similar to Region 2, with no staff and no proper liaison with the Genio Civile.

(xi) Region 6. (Sardinia) had only 2 engineer officers, and these were fully occupied with tasks at Cagliari which had been very heavily damaged, similar to those at Naples but on a smaller scale. One was withdrawn in June and the second in September, control being wholly relinquished to Italian agency even though there were large Allied forces still in the island.

(xii) North Africa (Tunisia, Algeria, Morocco)

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(xii) North Africa (Tizzi-Ouzou), Palermo, Naples etc.
(Preliminary works and problems.)

The nucleus of the Sub-Commission had been formed in Algeria at Tizzi-Ouzou in September 1943, and a period of about a month was spent in so-called "planning". Without knowing the extent and nature of the damage, at first hand, no effective reconstruction or rehabilitation could be planned. The Director made a short inspection tour in Sicily, returning again to North Africa. Towards the end of October 1943 an advance-party reached Palermo, followed by the remainder in the first week of November. The total T/O (War Establishment) had been fixed at 20 officers, but at that time the number consisted of about 12 only. Conferences were attended in Naples. An officer was sent to Brindisi, where the Italian Government was then located, and three others were sent to

Salerno to take charge of urgent works there required. Others remained at Palermo, as a part of A.C.C. (H.Q.) then located there, at the same time making inspection tours throughout Sicily, viewing actual conditions, making contacts with A.M.G. officers and with the Genio Civile, and making recommendations on specific problems. One of these concerned the extensive demolition and debris-clearance needed in Palermo, and another the restoration of the City's water undertaking which had been damaged by bombing. It is unnecessary to detail here the physical condition of places like Syracuse, Augusta, Catania, Messina and Palermo, as to the enormous damage inflicted on buildings, streets, facilities such as water, gas, electricity and sewerage, ports, and to roads and bridges covering hundred miles between these cities. The Sub-Commission had no direct control, for reasons given, but it did everything possible to stimulate repair activities, and many lessons were learnt as to what might be expected on the Mainland, later. The outstanding lessening of all was the utter impossibility of taking over engineering reconstruction tasks from the Armies, and carrying out even a bare minimum of work for the civil authorities, with a mere half-dozen engineer officers. Sicily also showed the chaos and disorganization into which the Genio Civile had been thrown, a picture more than confirmed by experiences on the Mainland during succeeding months.

(xiii) Military Works programme (initial).

Increase in Officer personnel.

The organizational period from January to March, with the Sub-Commission's Offices at Naples, was almost wholly occupied in taking over Lines of Communications works from the Armies viz. all main highways from Reggio (Calabria) and Taranto to points N. and N.-E. of Naples, immediately behind the fronts of the 5th and 8th Armies. About 3000 kms were taken over, with their hundreds of destroyed bridges and other interruptions, and miscellaneous other small projects. This necessitated building-up and improving the organization

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conditions actually encountered. A few officers were employed during the early months in supervising urgently required building works, roads, water schemes etc. at places like Naples, Salerno and Caserta. Some of these Schemes were required by A.C. (H.Q.), some by its various Sub-Commissions, others by the Armies, and others by Civil Officers, A.M.G., or by the Italian Government.

(xiv) Special Difficulties.

The period presented extraordinary difficulties, of which it is necessary to mention only a few:-

- (a) Plant and equipment owned by the Genio Civile or their contractors had been destroyed, or removed by the Germans. No concrete-mixers, no stone - crushers, no cranes, no vehicles; here and there a few wheel-barrow, some picks and shovels, or a few rusty road-rollers.
- (b) No stocks of structural materials existed, neither steel, timber, bricks, tiles; and no means of manufacturing them because of destroyed factories, lack of fuel and motive power (electricity), and transport.
- (c) Requisitioning and "freezing" of certain plants and materials, exclusively for 100% Army needs.
- (d) Labour difficulties, regulation of wage scales, and migration of labour to direct Armed Services employ, where men could often get higher rates of pay.
- (e) Feeding of workmen, particularly those in remote places, and the establishment of a heavy-workers ration, through contractors, in the face of wide-spread black-market activities.
- (f) Incredible difficulties about transport vehicles, tires, tubes, and spare parts; bearing in mind that

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(e) Feeding of workmen, particularly those in remote places, and the establishment of a heavy-workers ration, through contractors, in the face of wide-spread black-market activities.

(f) Incredible difficulties about transport vehicles, tires, tubes, and spare parts; bearing in mind that practically no railways were operating. Vehicles available to carry thousands of tons of materials weekly, often to remote places, seldom exceeded 10% of those the tasks demanded.

(g) Disorganization of the Genio Civile itself, which had probably lost 75% of its best engineers to the Italian Army, or still under detention as prisoners of war, or gone North with the Germans. The remaining 25% were cut off not only from their main sources of engineering supplies in the North of Italy, but also from their normal headquarters and records in Rome. Added to this, for months there was practically no post or telegraph service to and from Naples, the then headquarters of the Director-General (Signor Tizzano) of the Ministry of Public Works.

(xv) Assistance rendered to Armies; policy.

Against these handicaps, some of them almost insurmountable, the Sub-Commission struggled. Every engineering task that it could take over from the Armies and carry out by Italian Agency meant a corresponding release of officers and men of the (American) Corps of Engineers, or the (British) Corps of Royal Engineers, so that these could continue their duties in the combat-zones, and need not continually be leaving personnel and equipment behind in order to keep their Lines of Communication open. The sooner the "Bailey" bridge could be replaced by a permanent or even temporary structure, the sooner the "Bailey" itself could be loaded on trucks and taken northwards. The more stone from the local quarry for the road, or stone-blocks for the bridge or building, the less the demand on the Army for steel and cement, timber and transport, and a reduced demand on the shipping and imports programmes.

(xvi) Regional Engineers.

Administration, technical direction, postings and transfers.

Following the Naples conference mentioned, held in April by the Chief Commissioner; the position of the Sub-Commission in relation to the Public Works staff serving the various Regions was clarified. Each such staff would be headed by a Regional Engineer under the day-to-day general control of a Regional Commissioner, and available as his adviser at all times on works of Military or Civil engineering. Postings and transfers remained the responsibility of the Sub-Commission H.Q., and all matters of technical direction, organisation, and administration.

(xvii) Dual Organisation. (Public Works and Electrical).

2 2 9 3

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(xvii) Dual Organisation. (Public Works and Electrical).

The Operational period thus begun was steadily consolidated and developed through the remaining months of the year. At intervals there were meetings of all the Regional Engineers, one at Naples and others in Rome, at which problems were discussed, and common policies established. One of the latter was de-centralization to the maximum extent, placing on Regional Engineers responsibility for every kind of activity in their respective Regions, ranging from ports, power stations and pumping stations, to highways, bridges, buildings, and electric-power. During the months June to December practical experience showed that though de-centralization and local responsibility could be carried a long way, in most directions, this was unworkable as regards electric power, its generation, allocation, and distribution.

In Sardinia war-damage to power stations had been negligible, largely because the Germans had to leave the Island hurriedly. In Sicily there was greater damage, proportionate to the longer period the enemy had available.

Much the same applied to South Italy where, though damage and demolition was extensive in the vicinity of Naples, the enemy had left intact, possibly by an oversight, certain large hydro-electric plants in Calabria. In Central Italy, this meaning roughly the area from North of Naples up to Florence, enemy destruction amounted to well over 90% of all generating facilities both thermal and hydro-electric. Damage to transmission lines was also heavy. A very large program of repairs and reconstruction was begun, controlled by the Electrical Division of the Sub-Commission, and it became increasingly clear that a centralized control was imperative. Energy developed had to be transmitted more and more over great distances, on a single co-ordinated plan of (a) power availability and (b) transmission net-work, on principles analogous to those existing in United Kingdom, with its complex but highly efficient "Grid System". Thus, the idea that Regional Engineers would have a main responsibility for electric-power provision was unworkable, and personnel engaged on this vast problem, vital to the prosecution of the war, to railways and transport, to the industrial life of Italy and to the daily life of its population, had to be increasingly concentrated at the H.Q. of the Sub-Commission. This meant the making of much longer journeys with inevitable loss of time, but the problem was neither Provincial nor Regional, but in every sense national. Towards the end of December, in fact, steps were actively in hand to establish a "Super-control Centre" in Rome, with skilled personnel and complete telephonic communications, from which orders could be conveyed from hour to hour to scores of generating plants, as to the loading of various transmission lines, to keep in hand a reserve capacity at all times, and to maintain precise records. This meant an integration of the work of numerous separate Electric Power Companies in a way never before attempted in Italy, and the

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The nature of the Sub-Commissions work, has, in brief, resulted in de-centralization as to about 50%, and complete centralisation as to the other 50%. This may be the only Sub-Commission in the Allied Commission that has had to adopt, through sheer force of circumstances, such a dual type of organisation.

(xviii) Two Divisions.

In the early months of the year, with Army demands for the taking over of Military highways and bridges, this formed a separate Division (under a Lieut-Colonel), with Public Services such as gas, water, and sewerage, involving dealings with many private Companies forming another Division, under another officer of the same rank. Due to personnel changes later, and the placing of direct responsibilities on Regional Engineers, it became possible to combine these two Divisions under a single control. From the beginning the Electrical Division remained a separate entity, also under a Lt.Col. The Sub-Commission has thus for the last eight months had only two Divisions instead of three viz. (a) Electrical and (b) Public Works, the latter including most of the activities outside electrical or mechanical problems, and gas plants; but including very extensive Military Works.

Towards the end of the year certain subjects assumed special political importance, notably housing and special measures to deal with devastated areas, and these took up an ever-increasing amount of time.

(xix) Personnel (American and British).

It should be put on record that at Sub-Commission H.Q. and also throughout the staffs of the Regional Engineers there has been harmonious and completely integrated working, hardly on a single occasion interrupted by divergence of opinion on policy, personnel, or procedure. The appointment of personnel to particular duties was governed solely by consideration of suitable qualifications and experience, whether American or British. The basic idea of 50% American and 50% British has been adhered to as far as possible, but the actual numbers

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2. Italian Ministers.

In 1944 the appointment of Minister of Public Works, carrying Cabinet rank, was changed four times (average only about 3 months each). Their names were :-

Sig.	De Caro
"	Tarchiani (since nominated as Ambassador to the U.S.A.)
"	Mancini
"	Ruini

The appointment is now held by the last-named.

These frequent political changes, coupled with the complete chaos into which the Italian Government's Public Works Department had been thrown as a result of the war, militated strongly against any slow but steady recovery that might have taken place. Each separate Minister may have had similar objectives in mind, but his methods of approaching them were usually different from those of his predecessor. The Sub-Commission endeavoured, so far as it could, to act as a stabilizing influence and with some measure of success. In this it was helped by the fact that the Director-General (Technical) of the Ministry, corresponding to Chief Engineer, Signor Tizzano, remained in office the whole time. In the last week of the year he was dismissed following certain epuration proceedings (Defascistization) that had been instituted against him, in flagrant contravention of instructions from the Allied Commission at its highest levels, which had included this official in a special list of "Key", personnel. Drastic action was taken, resulting in Sign. Tizzano being again re-instated in his appointment, early in January.

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3. Military Works.

(and Public Works) Division

Highways and Bridges. (Army Priorities)

(i) These should be classed as Military Works rather than Public Works since, as noted above, they cover "Lines of Communication" and have been carried out by Italian personnel of the Genio Civile, under direct control by the Sub-Commission. Arising out of innumerable conferences, and instructions from A.F.H.Q., the Sub-Commission carried out the work on constantly extending and frequently changing lists of priorities, applicable to all parts of the country from Brindisi and Reggio in the South, to Florence in the North.

Proof of direct relief to the Armies is afforded, and also that the work has been satisfactorily done, in the fact that throughout the year considerable volumes of additional responsibilities were regularly being landed over.

February

(ii) An initial credit of 600 Million Lire was made available in February by the Italian Government, but by the Autumn this had been more than expended and the fund was raised to 1000 Million Lire.

By February these works were being undertaken right up to the combat zones, south of Cassino and Minturno. There were severe transport difficulties apart from that of materials, since civilian labour had also to be taken many miles daily, to and from towns in the rear, to the sites of the various works. Feeding arrangements had to be organised, extra rates of pay, and special financing and actual paying arrangements. At the same time the "Cantonieri" system (regular road gangs), which had largely broken down moving and after the German occupation, was strengthened and re-organised. About 1,000

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March

(iii) By March responsibility had been taken over for about 2,500 miles. Transport difficulties were acute not only for the supervisory staff (Allied Engineer Officers and Italian officials) but also as to trucks and lorries, to transport the thousands of tons of structural materials required. On one occasion, to quote a single example, one of the Sub-Commission's officers stationed near Foggia had to spend several days, travelling hundreds of miles, in an effort to get tyres and tubes for his contractors' lorries. The Armies furnished some special materials such as bitumen, steel, and occasionally cement and timber, together with necessary equipment e.g. concrete mixers, road-rollers, tar-sprayers etc. and numerous quarries were opened or reopened, for the supply of stone both for road-making and bridges.

April

(iv) In April H.Q. Allied Armies in Italy promised the loan of 200 trucks for a limited period. Conditions on certain roads, particularly those immediately North of Naples, began to show improvement, though repairs and reconstruction were extraordinarily difficult at that time by reason of intensive day and night traffic, preparatory to the advance that took place in May leading to the capture of Cassino, and the taking of Rome in June.

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May

(v) In May all such works in both the Army and South Italy zones were combined under a single control (Lt.Col. Thompson, Chief, Public Works Division). Large bridges under construction rose to 15, and the Chief Engineer No. 3 District decided to transfer practically all responsibility for bridges to the Sub-Commission. Supplies of materials improved, except for bitumen, and a marked improvement in road conditions both as to foundations and surfacing was reported in the Army Zones i.e. north of Naples up to the River Garigliano, and eastwards over to the 8th Army front. H.Q. Allied Armies in Italy handed over the 200 trucks but these proved to be of Class 5 category, with the result that only less than half of them could be kept regularly on the road. Six of the Sub-Commission's Engineer Officers, whose supervisory duties should have taken them hundreds of miles weekly on inspection duties were practically immobilized, being without vehicles.

Italian officials had power themselves to requisition vehicles and the utmost pressure was exerted (on the Minister and the Director-General) to induce them to exercise the power. Finally they did requisition 20 civilian vehicles, but mainly through an Allied officer being sent, specifically, to assist.

Note:-

Speaking generally, and over a period of many months of the year under review there was strange reluctance, lack of initiative, and a failure to exercise specific powers on the part of the Ministry of Public Works, and the Genio Civile that was most disappointing.

There was hesitation and delay in many matters besides that of transport. The reasons may be difficult to analyse.

It may be in part temperamental and psychological, in part the result of twenty years of Fascist domination, in part a reluctance to take drastic action that may upset private interests or those of friends, and in part a failure to realise that though the tide of war had swept over the immediate neighbourhood it was still raging, perhaps only 50 miles away.

The "Cantonieri" (road maintenance gangs) were resuming activity, but handicapped by the fact that many of their houses and depots along the roads remained occupied by Army personnel. Representations were made, resulting in a steady handing-back of the depots for normal use.

June

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Rapid preliminary surveys showed the need for an extensive bridge-reconstruction program, coupled with a shortage of Bailey-bridge portable equipment. Routes 6 and 7 between

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(vi) Early in June the great advance took place, Rome was liberated, and country far to the north and east of it. Rapid preliminary surveys showed the need for an extensive bridge-reconstruction program, coupled with a shortage of Bailey-bridge portable equipment. Routes 6 and 7 between Naples and Rome were found to be in better condition than might have been expected, with the exception of a number of wrecked bridges. A difficulty was that of finding firms of contractors with some engineering equipment, most of it having been hidden away, destroyed by the Germans, or taken north by them. Other difficulties were inadequate petrol supplies even for the limited transport available, and supplies of supplementary food-rations to workmen, through contractors, by means of special ration cards. (As to this latter, with gangs of men working in isolated places, the precautions that had to be taken to prevent food from finding its way into the "black market" were almost unbelievable).

It became clear that even a simplified system of returns from the Genio Civile could not be relied on. The service was still gravely disorganised, and communications by rail or road, post or telephone, remained very poor indeed.

Statistics were many weeks in arrears even from the nearer Provinces, and from the more remote ones (eight in number) and from the Islands, there was sometimes no information at all. Nevertheless, a "cross-section" covering perhaps 25% of South Italy up to the then fighting fronts showed :-

- (a) Road interruptions in 7 provinces (mostly wrecked bridges and culverts) numbered 640.
- (b) Included were 94 large bridges and 66 medium ones.
- (c) Temporarily re-built in timber 45, and 95 permanently completed in masonry (this included also culverts).
- (d) Central Italy State roads, length 840 kms; expended during six weeks 18 $\frac{1}{2}$ M.L. making a total of 47 $\frac{1}{2}$ M.L.
Note:- M.L. = millions of Lire, as from January 1944.
- (e) In Naples Province, 216 kms, including bridges, expenditure 18 M.L.
- (f) Benevento and Avellino Provinces, 15 and 3 M.L., respectively.
- (g) On miscellaneous works, Naples Province, besides roads and bridges, in a six weeks period 25 M.L. This including 2 M.L. on sewers repairs, 3 M.L. on repairs following the Vesuvius eruption in March, and 10 M.L. on anti-malaria control measures.
- (h) Apart from this 25% cross-section, over a short period, by the end of June expenditure had risen to 352 M.L. as an overall figure under the main highways and bridges programs.

July

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August

(viii) In August a new system of coupons for petrol, oil, and lubricants (transport vehicles) was started, operated through the numerous firms of contractors, exclusively those engaged on Military Works projects. But out of the 172 vehicles on loan from the Armies in the Southern Region, for example, 20 had to be scrapped, and never more than 50% of the rest were usable at any one time. In Regions 4 and 5 there was some increase in civilian-owned vehicles, the Genio Civile having been slightly more active in requisitioning, and firms of contractors having brought out vehicles from remote places in mountainous areas where they had long been hidden.

The labour situation showed improvement everywhere except in the Civitavecchia district, and "Cantonieri" forces were again substantially increased.

Inspection tours by H.Q. officers showed that the system of issuing supplementary rations through contractors (mid-day meal for heavy workers) was working reasonably well.

An increasing number of Italian civilian engineers was employed within territory handed over to the Italian Government, relieving Allied Officers to go northwards.

By the end of August the actual handing over of Lines of Communication works to Regional Engineers by Army Engineer Units in the forward areas was being done without delay, and with less confusion about progress reports, supervision, contract documents and payments, such as had been encountered earlier in the year.

Highways in the liberated Central Italy provinces were withstanding the pounding of heavy traffic fairly well, all shell and bomb craters had been repaired, and general maintenance was well in hand.

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September

(ix) In September the three Military Districts (Br.) and Peninsular Base Section (Am.) asked the Sub-Commission to take over several hundred miles of additional highways, including those from Rome to Spartivento, Siena and Leghorn (Routes, 6, 2, 8 and 1). By the end of the month expenditure reached 1054 M.L. The rate of expenditure was continually increasing, the September figure alone being 156 M.L.

A notable piece of work was done on Route 1 near Albegna, where the enemy had destroyed a very large reinforced-concrete bridge of 12 spans. Some spans having fallen into the river intact, a quick repair was possible if they could be raised to their original position. The operation was delicate and difficult, but in spite of this they were raised inch by inch by powerful jacks and timbering. Such problems could be multiplied indefinitely.

= 16 =

October

(x) October brought heavy rains, with many flood-interruptions, washing-away of temporary bridge structures, and small embankments and culverts. The latter had been filled in with earth by the Army Engineers following early damage to them, in order to get the roads back into use in a few hours, instead of spending several days or weeks on full replacements. Natural lines of drainage were thus blocked at scores of places along Routes 1, 2, 3, 6, and 7. Army traffic was gravely interrupted, but Mobile repair gangs were hurriedly organized, and with the exception of three places on Route 1 all the interruptions were reduced to very short periods. The main railway line Naples to Rome, near Cassino, was also out of operation at this time through flooding, and all Army supplies had to be unloaded and taken by road to Ceperano and there re-loaded on the railway. Fortunately a large concrete road-bridge had been finished on this stretch only two or three days previously, and the one-way Bailey bridge (which would have carried only a part of the traffic) had been dismantled and taken forward.

November

(xi) In November the Armed handed over additional bridge works between Rome and Leghorn and Rome and Naples, contracts having to be let very urgently. On Route 6 between Rome and Caserta, a distance of about 150 miles, some bridge works were being carried on both night and day, directed to the urgent release of Bailey-bridges. North of Rome it was planned that by the end of January 1945 72% of the Bailey bridges would be replaced by permanent ones, and 14% more by semi-permanent "Flambe" bridges (steel sections, now being manufactured in Italy).

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The Sub-Commission accepted responsibility for access roads to air-fields in the Rome area. These were ordinarily Provincial and Communal roads, but the American Army Engineers (Air Force) were no longer able to continue work on them.

Supplies of bitumen had been reasonably adequate for Military roads, but in November it was pointed out that there were about 1800 miles of other roads, of prime importance to the civil population which had deteriorated so seriously that complete re-construction would later be necessary, at prohibitive cost, if no bitumen could be found. The Sub-Commission had requested 6000 tons during the ensuing six months, and the situation would be saved only if this amount would be shipped.

The transport situation remained "extremely grave", with no additional Army vehicles available, and tyres and spare parts not obtainable for trucks belonging to the Genio

Civile and their contractors. Demands on Italian Facilities in the northern forward areas were increasing, and greater responsibilities were being put on the civil administration further south, in territories restored to Italian Government control.

December

(xii) In December there was a special conference at Perugia called by the Chief Engineer No. 1 District, attended by officers from the Sub-Commission H.Q. and Regional Engineers of Lazio-Umbria, Toscana, Emilia and Marche-Abruzzi. There was also an important circular issued by the Chief Engineer No. 3 District to all his Co, RE, with the concurrence of the Chief Engineer A.F.H.Q. Both the conference and the circular were directed to an all-round improvement in the organization under which the Sub-Commission takes over works on Lines of Communications from the Armies, and supervises the Genio Civile in their execution.

Special inspections were made by the Sub-Commission's officers of all Military Highways between Naples, Rome, Lechorn, and Florence.

Progress on the release of Bailey-bridges was increasingly satisfactory, with plans for re-building 25 exceptionally large bridges in Provinces north of Rome.

In March 1944 about 4000 tons of heavy engineering plant and equipment had been ordered from America, and advice was received through A.F.H.Q. that a small part of it (the first consignment) would arrive in January 45. This did not include, unfortunately, any part of the sorely - needed transport vehicles. (It is to be noted that it took about

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(xiii) Comparative Statement.

Appended is a tabular statement giving statistics for the year 1944, showing progressively the numbers, value, and nature of various classes of projects:-

= 18 =

1944 (10 months)

NOTE

- (1) M.L. = Million Lire
 (2) One Million Lire =
 (= 2,500 pounds sterling
 (= 10,000 dollars.

	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<u>A. MILITARY WORKS</u>										
(a) New contracts made No.	33	34	35	37	84	83	72	63	58	No.
(b) Value M.L.	54	58	94	102	118	127	115	138	67	M.L.
(c) Total Contracts No.	33	67	107	144	238	321	393	456	514	No.
(d) Value M.L.	54	192	250	352	500	594	739	877	914	M.L.
<u>B. NON-MILITARY</u>										
(a) New contracts made No.						33	99	41	568	No.
(b) Value M.L.						58	245	131	354	M.L.
(c) Total contracts No.						46	145	186	754	No.
(d) Value M.L.						70	315	446	800	M.L.
<u>C. TOTAL BRIDGES</u>	Completed - January to Dec. 1944								Number, 736	
<u>D. TOTAL ROADS</u>	(Improved or Maintained) 31 Dec. 1944								Miles, over 4,000	

Remarks: (a) Figures Cols. 2 - 9 include only projects of such size, or character, that are
 (b) Cols. 10 - 11 include larger number of projects, due to changes and improvements
 (c) Col 11 does not strictly reflect data given in the December (monthly) report purposes.

NOTE :

During December a total of 616 new projects were undertaken with a total value of 401 million Lire. of projects were completed during the month. There were in hand during that period 1884 projects with a value of 536 million Lire.

1944 (10 months)

(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12) Equivalent	(13)
May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Dollars (Millions)	Pounds Sterling
35	37	84	83	72	63	58	No. 109		
94	102	118	127	115	138	67	ML. 123	= 1.23	= £. 307,500
107	114	238	321	313	456	514	No. 623		
250	352	500	594	739	877	914	ML. 1,067	= 10.67	= £. 2,667,500
			33	99	41	568	No. 507		
			58	245	131	354	ML. 278	= 2.78	= £. 695,000
			46	145	186	754	No. 1261		
			70	315	446	800	ML. 1,078	= 10.78	= £. 2,695,000

Completed - January to Dec. 1944

Number, 736

Improved or Maintained) 31 Dec. 1944

Miles, over 4,000

Include only projects of such size, or character, that approval of Sub-Commission HQ. was required.
 Larger number of projects, due to changes and improvements in the making of returns.
 May reflect data given in the December (monthly) report, but can be taken as correct for present.

How projects were undertaken with a total value of 401 million lire. Approximately an equal number
 month. There were in hand during that period 1884 projects representing a total cost of 2 billion.

(xiv) Liaison with Armies.

At the Headquarters of the respective Chief Engineers an Engineer Officer of the Sub-Commission was posted, his duties being that of liaison on the one side, and control of the activities of the Genie Civile on the other.

(xv) Semi-autonomous Organisations.

A difficulty, found at the beginning, was the number of separate and semi-autonomous organisations in Italy engaged in tasks which may be broadly described as "Public Works" but working along separate lines. The principal of these was probably the A.A.S.S. ("Azienda Autonoma Strada Statale") which concerned itself with highways and bridges. Another was an organisation dealing with land-reclamation for agricultural purposes, and also carrying out remedial works of an anti-malarial nature ("Bonifiche"). There were others on a parallel plane, not to mention Municipal engineering staffs, Communal, and so on. It was almost impossible to deal with these as separate entities, and therefore over a period of months orders and instructions were increasingly channelled through the Minister and through his Director-General (corresponding to Chief Engineer). Some confusion continued until the Minister published a Decree, legally and finally abolishing the A.A.S.S.

In Sicily, the Minister (at our request) brought under direct control the technical staffs serving several separate Departments e.g. railway, housing, public health, etc.

These units and agencies were gradually brought under one control as a part of the Sub-Commission's activities, but their existence (peculiar to the Fascist organisation of the country) militated against rapid action, at times. There were misunderstandings both administrative, technical, and financial, and it took time to get these "straightened out".

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3.4. Labour forces employed.

By the end of December 1944 the number of people directly engaged in repairs and reconstruction activities was probably about 800,000. This is exclusive of large numbers (possibly up to 100,000) employed in ancillary industries such as brick, tile, cement, and numerous other manufactures. Precise figures for December are not yet available, owing to communications and other difficulties, but for November the figures were as follows :-

	<u>Numbers</u>
Sardinia) Islands	22,240
Sicily)	88,152
Calabria	30,521
Lucania	9,386
Puglia	65,411
Campania	149,949
Abruzzi & Molise	102,425
Lazio	258,621
Umbria	32,633
Marche	1,398
Total	760,736

These are impressive figures. When it is realized that this "army" of upwards of 3/4 million people are making a living in connection with works under the direction of the Sub-Commission, its contribution not only to the Armies but also to the nation at large, in mitigating unemployment and its attendant unrest, may be clearly understood.

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4. War Damages.

Whilst the Islands (Sicily and Sardinia) and considerable portions of Southern Italy decreased in importance in a Military sense, with a corresponding reduction in the Allied Engineering personnel responsible for them, there were continually increasing responsibilities as the Armies advanced northwards.

On balance, the work of the Sub-Commission was heavier in Dec. than at any previous time. This was brought about not only by the ever-extending geographical areas to be covered, but also by the heavily increased degree of war damage that the retreating enemy inflicted on the country. In the Electrical field alone, for example, Central Italy showed complete destruction of generating capacity (hydro-electrical and thermal stations) of the order of well over 90%. In Sicily only the thermal stations were destroyed and in Sardinia not even those. In South Italy, generally speaking, the principal hydro-stations were left intact, although there were grave other electrical damages, sufficient to make it necessary in February to impose over the whole of the country south of Naples a severe power-rationing system. The working out of this, and more particularly its actual enforcement, involved an immense amount of work on the Electrical Division of the Sub-Commission. The later Central Italy position was, by comparison, plainly disastrous. A far stricter rationing system had to be involved, and every kind of temporary expedient to cover first-aid repairs adopted. The Central Electricity Board was dissolved in July at very short notice and all its functions became merged in those of the Sub-Commission, probably quadrupling the responsibilities of its Electrical Division.

Again, in the field of highways and bridges, systematic destruction by the enemy in the whole area from Cassino to Florence was found to be more serious than ever. The Armies could not leave behind them for an indefinite period portable steel bridges (generally of "Bailey"-type), and dates were continually fixed, quite rightly, by which on even an important

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While it is admitted that enemy destruction in Central Italy was carried out in a methodical and scientific manner, one cannot help but wonder whether that destruction was not carried out to spite the Italians, more than to hinder the Armies, or if it was done as a part of German "SCHADENLUST", i. e. a lust to create damage, and to destroy. (there is no exact counterpart for that word).

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5. Italian Public Works Ministry. (Genio Civile, Resources)

The end of 1943 saw the Italian Public Works Department in a state of complete chaos, notably lacking in experienced personnel, and with neither plant, equipment nor supplies of materials.

By way of assistance this Sub-Commission could and did help in the matter of personnel; i.e. Engineer Officers regularly assumed technical responsibilities that should have been wholly shouldered by the Genio Civile. This may still continue for some time. It could give nothing else by way of actual assistance. (No vehicles, no plant, no tools, not even a wheelbarrow.)

The program of reconstruction in South and Central Italy thus facing the Genio Civile, even on a minimum scale of only first-aid repairs, was an enormous one. It still remains so. Resources were next to nil, and in the absence of re-starting factories or getting in large quantities of imports, those resources are still almost negligible. Factories producing even simple things like cement, bricks and tiles cannot be restarted because of lack of suitable fuel to burn them. There is still a great shortage of these primary materials and their allocation even in minimum quantities is a source of continual consideration and reconsideration. The Armies operate some of these plants, and take all the production they can get. Such needs must always be first. Steel is virtually unobtainable, and timber only in most limited quantities. Factories that might produce engineering materials even of a simple type (excluding machinery altogether) cannot be restarted because of destruction of electrical generating plants. On electrical power they are wholly dependent.

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6. Allied Commission (Resources).

This Sub-Commission is not acquainted with details of the physical equipment, if any (e.g. transport) with which the A.C. was provided when it began its duties. For itself, however, it can only report that it was provided with NOTHING. The only equipment finally assigned was 6 "Jeeps", to be used exclusively on military highways reconstruction, and these were taken away before the move to Rome. Throughout the months when its Headquarters were at Naples, the getting of even a few cars or jeeps (to carry out essential tours of inspection) was an endless preoccupation. And it was only after arriving in Rome that this ceased to be a major handicap.

Vehicles for officers, and for supervisory officials of the Genio Civile, are however only a minor fraction in comparison with the transport required for materials for the reconstruction of thousands of miles of highways, an equal number of bridges, buildings, and other war-damage repairs needed over distances of hundreds of miles.

These tasks having been handed over by the Armies, and on Military priorities, it required months of almost superhuman effort to get (from the Armies) trucks and lorries in even small numbers. When they were obtained, finally, they were in poor condition and often only 50% of them could be put "On the Road" at any given time. Provision of drivers, spare parts, petrol and lubricants, responsibility for garaging and control, and other matters presented extraordinary difficulties. They were solved to some extent (but even by December incompletely) in conjunction with the Armies on one hand, and the Genio Civile on the other. Supplies of stone, machinery for quarries operations, steam-rollers for roads, cement, bitumen, and many other things, were arranged in part through the Armies, and in part through the Genio Civile and their contractors. But this only applied to specific repair and reconstruction operation of direct military importance and on military priorities. It was a case of continually buying, begging, or borrowing; in fact, anything and everything short of stealing. When such equipment was found parts were usually missing, and officers had to spend a disproportionate amount of time in trying to help contractors to find parts, and then find shops which could repair them and put them together. This was particularly true for such items as steam-rollers, crushers, and trucks.

However, the contractors were the Sub-Commission's woes, and whilst they existed no real results could be achieved.

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7. Public Utilities (Companies).

Apart from the Genio Civile itself, all Companies in South and Central Italy providing engineering services such as gas, water and electricity, were in a semi-paralysed condition because of lack of transport. Even where they had a few vehicles left these had no tyres, or they were in an almost worn-out condition. The daily life of the people depends on these utility services and the Armies require (at least) water and electricity. Repair works even on a minimum scale were continually delayed. Utilities Companies gave warning that they could not be held responsible for breakdowns in service if they were unable to go to the scene of the trouble

and make repairs. Such break-downs did occur and there were delays. Materials and spare parts for these Utility Companies were most difficult to get. Reserves were exhausted, such as they had, and the method of supply to Regional Engineers (through Regional Supply Officers) was unsatisfactory. The "Local Resources Board" had only a monthly meeting, and the result of that meeting, if favourable as to allocation, might be that the Regional Engineer was informed that the material was available 100 miles away. An officer then usually had to be detailed to go with transport to fetch it, and on the spot make a search, sometimes returning without having being able to locate it. There was the example, by no means exceptional, of the 50 tons of cement asked for on 9th Sept. 1943, duly certified as being of Priority I and submitted in the normal manner to the L.R. Board (Form ACC/MAT.10). A "release" was granted on 25th. Jan. 1945; time taken; 4½ months.

The Companies were also faced with enormous bills for War Damage repairs, and their financial position was precarious.

Current revenues were in many cases very low due to (a) destruction of parts of their plant, (b) stoppage of industries, (c) damage to consumers' houses, (d) departure of population and (e) drop in value of Lira. The Italian Government was asked to arrange a special system of financing, so that at least first-aid repairs could go ahead rapidly.

The Sub-Commission dealt in detail with many applications from the Companies to be allowed to increase their charges to consumers, varying from 100 to 500% above pre-war scales. Some were allowed, some reduced, and some disallowed. By the end of the year the detailed financial investigation work had been transferred to the Minister of Public Works, assisted by an Inter-Ministerial Price Committee. The Sub-Commission retains certain general supervisory and advisory functions. (The matter is noted, in greater detail, in para. 12 (viii) of this report).

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8. Damaged Cities, and Town Planning.

In February 1944 the Minister was asked to have surveys and plans made showing the severity of war damage in the principal towns, i.e. in various colours showing 100% total destruction, 75%, 50%, 25%, or where only superficial. They will form a basis for future reconstruction and town-planning. The following survey plans were received:- Matera, Reggio (Calabria), Bari, Catanzaro, Caltanissetta, Potenza, Enna, Trapani, Messina, Siracusa, Agrigento, Cagliari, Naples.

9. Regional Engineers (Other Duties).

Reference has been made to the nucleus Engineering staff found in various Regions, and the fact that they were responsible for other things besides Public Works. Region I (Sicily) was mentioned, where the responsible engineer officer dealt (in addition) with road and rail transportation, mining, telecommunications, and Marine works such as lighthouses. Convenient as it may have been for Senior Civil Affairs Officers, (more recently Regional Commissioners) to have these various subjects under one control, experience proved that no single individual can have either the experience, the qualifications, or indeed the necessary time to deal adequately with them. The Sub-Commission expresses, as its considered opinion, that Public Works and Utilities in themselves proved to be of such importance, and to cover such wide fields of effort; that it was a mistake ever to combine them with transportation, telecommunications, and other things. This was a real difficulty, and apart from the objections to it mentioned, there was the additional one that the officer in charge had to be responsible to different Sub-Commissions of the A.C., instead of to one Sub-Commission. There was divided responsibility, and to some extent divided loyalties. Note:- If in any other country at a later stage of the war, or after it, an organisation on similar lines to the Allied Commission is set up, there are the strongest grounds for saying that the mistake should not be repeated.

10. Waterworks, gasworks, sewers, etc.

In the 1944 monthly reports full details were given about these, i.e. damages incurred through allied or enemy action, and as to repairs in progress. The field is a wide one, and no short summary is possible.

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The only gasworks in South-Italy, Sicily and Sardinia are those serving the larger cities. At places like Messina, Catania and Naples there was very heavy damage. In other places it was less, such as at Palermo and Trapani, whilst in Rome and Cagliari the damage was nil. Apart from this, and a grave shortage of spare parts for repairs, a main difficulty was throughout 1944 that of coal-supplies. Neither Italian lignite nor Sardinian coal is of real value for gas production; gas-coal must all be imported by ship from the U.K. or elsewhere. A few of the smaller installations began operation. Naples and Palermo had partial supplies; and Rome had a very poor supply from Sept., (both as to quantity and pressure). Repairs to the gas plant and distribution system at Florence were under way, and service will be partially resumed in March 1945. By authorization of A.F.H.Q. and the 5th Army, Toscana

Region A.M.C. and the Sub-Commission supervised the rehabilitation of the natural gas-fields at Pietramala, including compressor stations and a pipe-line which now delivers gas to Florence where it is used as motor-fuel, and for cooking purposes in civilian hospitals. (It is believed that this is the first time that natural gas, -without adulteration-, has been used domestically in Italy, with the possible exception of experimental installations.)

Damage to waterworks were severe, e.g. reservoirs and aqueducts destroyed, together with pumping stations, purification plants and distribution mains. A fairly adequate supply was restored at places like Palermo and Naples within a few weeks of their occupation, and similarly in scores of other smaller towns. Damage to the Rome system was severe, but was repaired within 5 months. In the Provinces immediately south of Rome the water-systems of 15 or 20 towns were completely wrecked and a very large task remains, as yet only recently begun. Fourteen projects were examined and approved, technically and financially (about 24 M.L.).

Damage to sewerage systems in the various towns was moderate in extent and could be repaired without difficulty, largely due to the fact practically none of the towns were on level sites, and so were not dependent on the working of pumping-stations. This will not be the case when Northern Italian cities are reached, on the plains. It is to be expected that the Germans will destroy all pumping-stations raising sewage, and also dealing with run-off water from the streets and roofs of buildings during times of heavy rainfall. Similarly, all pumping-plants serving many land-reclamation areas. The latter often serve a three-fold purpose and are of extraordinary importance - viz. (a) prevention of floods, thus protecting inhabited areas from inundation (b) enable agriculture to be established, or continued, and (c) powerfully assist in the campaign against malaria.

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11. Reconstruction, possible costs.

Estimates and Reports to Economic Section (furnished in detail) showed that the possible cost of a first-year post-war program might be 3 billion Dollars, of which one-third might be required for imported plant, equipment, machinery, and materials.

The position was given in two divisions :-

- (a) South of the Pisa-Rimini line;
- (b) North of it.

= 27 =

Additionally, the Sub-Commission set out (October) in considerable detail its views as to how a part of the substantial total of Dollar-Credits set up by the U.S. Govt. in favour of Italy during the autumn can best be expended e.g. on machinery, electrical equipment, heavy plant for engineering contracts and certain materials, to be imported from America.

12. Procedure (projects, sanctions, and approvals)

This was a matter demanding constant examination and review throughout the year. The declared policy of the Allied Commission, applicable to all Sub-Commissions, was a progressive handing over of responsibility to the Italian Government.

In the case of the Public Works Sub-Commission the policy was strictly conditioned by three considerations, and at all times these had to be balanced one against the other as the months passed. They may be summarized as :-

(a) First priority for all Military Works projects required by the Armies, with full control over them by the Sub-Commission.

(b) Need for very numerous civil projects of all kinds, without which prosecution of the war effort in Italy, in its broadest sense, might be prejudiced.

(c) Disorganisation of the Genio Civile service coupled with a severe shortage of all structural materials; and the control of critical materials such as steel, timber, cement, and others.

Following the assumption of full responsibility by Regional Engineers (period June to August) it became possible by September to frame a workable system. This was dated 15 Sept. and is shown on page 30; it is self-explanatory. It shows the control exercised over Military works both in Italy and A.M.C. Territories, and under items 2,

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Following the assumption of full responsibility by Regional Engineers (period June to August) it became possible by September to frame a workable system. This was dated 15 Sept. and is shown on page 30; it is self-explanatory. It shows the control exercised over Military works both in Italian Government and A.M.G. Territories, and under items 2, 3 and 4 the controls maintained over civil projects of varying sizes. Certain exceptions should be noted on the statement, as to bridges in excess of a certain span.

In November there was a further advance, the Italian Government being given power to approve and carry out all civil projects within its territory, irrespective of cost, provided they did not involve the use of imported critical materials. At about the same time the Government was given power to control and release critical materials produced in Italy, in that way making the chain of responsibility complete. By the end of the year it was as yet too early to say whether these important additional, or rather restored, powers were being properly

exercised. Indications received through Regional Engineers tended, perhaps, to show that at any rate in one or two of the Regions some civil schemes were being started that could well have been left over for a time, and that though several weeks had elapsed no effective machinery had been set up for the allocation even of locally-produced critical materials.

[In January 1945 the Armies obtained that Military Highways were being neglected in Sth. Italy due to withdrawing most of our engineers. The matter is being investigated further.]

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Declassified E.O. 12356 Section 3.3/NND No.

785015

NOTE :-
 = 1 Million Lire
 = 10,000 Dollars
 = L. 2,500 sterling

HEADQUARTERS
 ALLIED CONTROL COMMISSION
 Public Works and Utilities Sub-Commission
 APC 394

TYPE OF PROJECTS	PROCEDURE Italian Government Territory
1. Military - All types, regardless of cost of materials required.	Approved by Reg. Engr. Submitted thru ACC. channels to HQ. for final approval.
2. Civilian - Up to 500,000 Lire (A) No critical materials (B) Requiring critical materials.	(A) Approved by Compartimenti Italian Engineers only. List submitted to Reg. Engr. by 25th of subsequent month for attachment to monthly report. (B) Approved by Reg. Engr. - Submitted thru Italian channels to HQ. for final approval.
3. Civilian - 500,000 to 1,000,000 (A) No critical materials. (B) Requiring critical materials	(A) Approved by Reg. Engr. Forwarded by Italian Engr. to the Minister for final approval. List attached to monthly report by Reg. Engr. showing approvals for previous month. (B) Approved by Reg. Engr. Submitted thru Italian channels to HQ. for final approval.
4. Civilian - Over 1,000,000 with or without critical materials.	Approved by Reg. Engr. Submitted thru Italian channels to HQ. for final approval.

EXCEPTIONS TO ABOVE:

Bridges: All plans for structures with span in excess of 10 feet require the approval of HQ.
 (A) On projects not requiring financial approval of HQ. 2 copies of plan and 1 copy of estimate submitted thru channels. One copy of plan will be returned to Regional Engineer bearing stamp of approval.
 (B) On projects requiring financial approval by HQ. 2 copies of plan and 1 copy of estimate submitted thru channels as outlined above - One copy of plan will be returned to Regional Engineer to HQ.

NOTE: This supersedes all previous instructions with reference to routing of project approval.

RWS/bb

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

15 September 1944

PROCEDURE Italian Government Territory	PROCEDURE A.M.C. Territory
Approved by Reg. Engr. Submitted thru ACC. channels for final approval.	Approved by Reg. Engr. Submitted thru ACC. channels to HQ. for final approval.
Approved by Compartimenti Italian Engineers List submitted to Reg. Engr. by 25th of next month for attachment to monthly report.	Approval by Reg. Engr. List attached to monthly report by Reg. Engr. showing approvals for previous month.
Approved by Reg. Engr. - Submitted thru Italian channels to HQ. for final approval.	(B) Approved by Reg. Engr. Submitted thru ACC. channels to HQ. for final approval.
Approved by Reg. Engr. Forwarded by Italian to the Minister for final approval. List attached to monthly report by Reg. Engr. showing approvals for previous month.	(B) Approved by Reg. Engr. List attached to monthly report by Reg. Engr. showing approvals for previous month.
Approved by Reg. Engr. Submitted thru Italian channels to HQ. for final approval.	(B) Approved by Reg. Engr. Submitted thru ACC. channels for final approval.
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In excess of 10 feet require the approval of HQ.
Approval of HQ. 2 copies of plan and 1 copy of estimate shall be submitted direct to HQ. thru ACC., to Regional Engineer bearing stamp of approval.
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tions with reference to routing of project approval documents.

13. Defascistisation ("Epurazione")

The Sub-Commission is responsible to the C.A. Section of the Allied Commission for seeing that the Minister carries out the various Decrees and Orders promulgated in recent months. The procedure has been speeded up, all officials in Grades 1 to 4 now being due to be completed by the end of January 1945, with an extension of a month in special cases. All cases are to be lodged before the "Commissione di Epurazione" by the end of January, and all decisions are to be announced by the end of April. As at the end of December, referring to Grades 1 to 4 only, out of a total of 17 officials, 9 investigations by the Commission had been completed, and 6 of them had been removed from office. The latter had all lodged appeals. (These figures include the case of Sig. Tizzano, the Director-General, who was reinstated under orders of the A.C.)

All grades included (down to grade 9), out of a total number of 887 the Minister had made preliminary investigations in 353 cases, and the Commission had dealt with 105 cases.

The matter is being actively pursued in direct contact with the Minister, and with the Secretary to the Epuration Commission attached to that Ministry. The task is a distasteful and difficult one.

14. Housing.

(1) A Decree concerning repairs to war-damaged properties, which had been the subject of study and exchange of ideas for some months on the part of the Public Works Ministry and this Sub-Commission, was published in the Gazzetta Ufficiale No. 93 dated 12 Dec. 1944.

Prior to and since publication the Sub-Commission

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14. Housing.

(i) A Decree concerning repairs to war-damaged properties, which had been the subject of study and exchange of ideas for some months on the part of the Public Works Ministry and this Sub-Commission, was published in the Gazzetta Ufficiale No. 93 dated 12 Dec. 44.

Prior to and since publication the Sub-Commission prepared, as advice to the Ministry, data concerning the necessary financial and organisational implementation to operate the Decree, which originally did not contain these provisions.

Progress was made with final plans for this implementation, and the new Minister (Sig. Ruini) promised to present them in a workable form in January '45. Basic points on which agreements have tentatively been reached include the use of Advisory Committees to be organised in each war-damaged Comune, and the temporary enrolment of Comune local Engineers or Genio Civile personnel, to save time, and to increase the Committee's knowledge of available local resources.

The Decree was endorsed by the A.C. and published, applicable to all A.M.G. and Italian Government areas, in the "Gazzetta Ufficiale" No. 101 of 30 December 1944.

= 31 =

(ii) In parallel with work on the Decree, a start was made towards arranging (through other Sub-Commissions) the procurement of, and making available to the Italian Government, constructional material and necessary transport for it.

Inspection trips covering the devastated areas (1944 battle lines) were made and conditions as to roofless persons, building materials resources, mines-clearance etc. were ascertained, for assimilation into plans for a quick application of the new Decree.

Appraisals of statistics received from the Ministry, covering 28 of the 52 liberated Provinces were made, and results charted as guides to the financial aspects involved.

Evidence was clear by December that this matter of housing is now being dealt with diligently and keenly by the Italian Government, through the Ministry of Public Works.

15. Ports (Sunken Ships)

This matter was referred in successive reports from March 1944. The Chief Commissioner specially addressed the Prime Minister on the matter in September. Since that time it can only be stated that the matter has "drifted on", with correspondence to and from the Commander-in-Chief Mediterranean, H.Q. Allied Commission, Navy Sub-Commission A.C., and Departments of the Italian Government. The last communication was from the Navy Sub-Commission to the Chief of Staff A.C. on the 28th December recommending, inter alia, that "no further action be taken by the Allied Commission, pending advice from the Commander-in-Chief, Mediterranean."

This Sub-Commission made surveys of the then existing

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This Sub-Commission made surveys of the then position in South Italian ports in the early spring and it appears, on present evidence, to be unfortunate that so long a time has elapsed without a final and permanent settlement as to the agency to carry out the actual work of raising the many sunken vessels. Had the Sub-Commission be permitted to continue the work more ships might now be in service, and some of the smaller ports in operation.

16. Clearance of mines.

This matter was frequently referred to in successive reports.

An organization was established late in 1944 by the Italian Government which promises to go a long way towards solving the dangerous situation that still exists over wide areas. This Sub-Commission (and the Ministry of P.W.) are particularly interested from the standpoint that neither bridges nor buildings can be rebuilt, roads cannot be repaired, and not even debris-clearance carried out in a proper manner, so long as this acute mines menace exists.

It is estimated that the retreating Germans left behind them about 3 million mines in those parts of Italy so far liberated.

It is hoped that progress in 1945 may be more rapid, with consequent better reconstructional progress by the Genio Civile, their contractors, and labour in their direct employ.

The Regional Engineer, Umbria Lazio expected 150 men (specially trained civilians with detectors) to begin work in his Region early in 1945.

17. Financing of projects.

This was a constant pre-occupation throughout the year, in spite of regular advance notifications to the Ministry of Public Works about all schemes approved, close contacts with the Finance Sub-Commission (Allied Commission), and similar contacts between Regional Engineers and the Finance Officers on duty in the respective Regions. It is desired to place on record the fact that the Finance Sub-Commission to the maximum, doing

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In spite of this reports were constantly received from Regional Engineers, and indeed from individual firms of contractors, to the effect that large sums of money remained owing for periods of weeks or months. A single example suffices. In Lazio-Umbria Region (R.Q. Rome) between October and December the Minister of Public Works approved projects under his own powers to the value of 66 M.L. Even by the 31st December not a single Lira had been made available for disbursement i.e. "in the Bank". In consequence projects that had been started were making very slow progress,

contractors not knowing when, if ever, they would be paid. Unless there is a drastic improvement in this important matter, at a very early date, it is obvious that the vast programs of repairs and reconstruction will be hopelessly delayed.

This is perhaps a measure of the ineffective organization of the Public Works Ministry on its Administrative side, as opposed to its reasonable efficiency from the purely technical and engineering aspect. These and other administrative defects were pointed out to the then Minister in a detailed communication in September which has, up to the end of 1944, unfortunately, produced no results. It should be stated, however, that the new Minister has taken drastic action to improve this situation and it is hoped that prompt and adequate financing will be done very soon.

18. Miscellaneous

Civilian engineers
Vesuvius eruption 1944
Prison extensions
Building projects
Land-reclamation and anti-malaria works.

Four civilian engineers from the United States joined the Sub-Commission in October, one being posted to duty at the H.Q. offices, and the other three allotted in the Regions. The field of employment for such civilians under present conditions is somewhat restricted, since so large a part of the Sub-Commission's work consists of military works rather than ordinary public works. It hardly needs to be stressed that a civilian, no matter how competent in a technical sense, cannot possibly deal direct with Senior Engineer Officers of

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Numerous projects of a special character came under review during the year, of which it suffices to mention only two or three.

The eruption of Vesuvius in March 44, the most serious over a long period of years, caused wide-spread damage through flows of lava reaching roads and villages near the mountain, and depositing thick layers of ashes and cinders over towns

and villages considerable distances away. Millions of Lire were spent in clearing the latter, and parts of villages remain to be rebuilt, bridges and water-courses cleared, and so on. There was also a scheme for the building of heavy retaining walls high up the slopes of the mountain, in order to prevent future landslides of mud and ashes from the new cone. This latter scheme, as put forward by the Genio Civile, proved to be technically unsound even on the evidence of the mere outline plans and data concerning it. Following a special inspection made by the Deputy-Director of the Sub-Commission in September, accompanied by the Regional Engineer (Southern Region), the Genio Civile were advised that the scheme for the retaining walls, as it stood, would probably be a waste of money and materials, and it ought not to proceed.

It should be added, in fairness, that this was one of comparatively few projects submitted to the Sub-Commission during the year by the Genio Civile, of major importance, that was found to be technically unsound.

At the request of the Public Safety Sub-Commission a special program of re-building and extending prison accommodation in Sicily and South Italy was started in the spring, designed to make provision for several thousand additional prisoners. The respective Regional Engineers gave special attention to this, and the works were completed by the end of the Summer.

Numerous building and repair projects were initiated and supervised at the request of other Sub-Commissions e.g. warehouses, offices, residential quarters, and certain roads.

Apart from certain "Bonifiche" (land-reclamation and anti-malaria works) put in a hand in the vicinity of Rome by the Regional Engineer (Umbria-Lazio), the most important scheme was in the Pontine Marshes, estimated to cost about 50 M.L. Financial provision being lacking there was long delay at the outset, but by the end of the year the work had made good progress. In this connection it is interesting to note that the Public Health Sub-Commission were of the opinion that the flooding of the Pontine Marshes in the early spring of 1944, by

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19. (i) Electrical Division.General Observations.

There are few countries in the world, with the exception of Switzerland, where hydro-electric power has been developed to the extent which obtains in Italy. Primary reasons for this are :-

- (a) Suitable geographic conditions.
- (b) Shortage of natural resources such as coal, oil and gas.

The result is that the entire economy of the country is largely dependent on its hydro-electric power stations, and high-voltage transmission lines.

The fact was recognized by the enemy, and he has carried on a definite programme of demolition and mining, directed at the electric power-resources of the country for the purpose of hampering the Allied war effort. The effect has been that factories, railroads, and food-processing plants have been unable to operate, with resulting unemployment, requiring the importation of large quantities of food and finished products, in order

(a) to carry on military operations and (b) keep the civilian population alive. The Electrical Division of the Sub-Commission was charged with the overall programme of conserving and restoring this vital natural resource, keeping in mind at all times the military situation. Hence, close relations are maintained with all army units, who may perform first-aid work in the first and second phases of operations.

(ii) Geographical Areas - Details - (Electric Power)(a) Sicily.

Prior to the invasion the Companies were short of generating capacity, and had more demand than they could supply. In recent years they had confined their electric

effect has been that factories, railroads, and food-processing plants have been unable to operate, with resulting unemployment, requiring the importation of large quantities of food and finished products, in order (a) to carry on military operations and (b) keep the civilian population alive. The Electrical Division of the Sub-Committee was charged with the overall programme of conserving and restoring this vital natural resource, keeping in mind at all times the military situation. Hence, close relations are maintained with all Army units, who may perform first-aid work in the first and second phases of operations.

(ii) Geographical Areas - Details - (Electric Power)

(a) Sicily.

Prior to the invasion the Companies were short of generating capacity, and had more demand than they could supply. In recent years they had confined their electric development to hydro-electric projects. The original plants were thermal-stations (coal and steam-driven) the principal ones being located in Palermo, Catania, and Porto-Empelele.

The Island had an inadequate transmission line system which interconnected the plants, but they had been considerably damaged by combat operations in some areas, and required many months to repair. The principal difficulties were materials, conductors, and transport.

The 70,000 Volt trunk line connecting the east and west sides of the Island was not repaired until May 1944. In order to get in sufficient conductors to make this was it was necessary to recover, and salvage, most of the damaged overhead trolley-wire of the street-car system of the wrecked City of Messina.

The steam-power plants were in a bad state of repair from lack of maintenance, and damage sustained from shell-fire and bombing. Repairing of an emergency nature was effected in order to provide power for port facilities, military, and essential civilian services; these extended over a period of nine or ten months. The speed with which the energy was driven from the Island prevented major wrecking-operations to the hydro-plants. The period previous to the invasion was unusually dry, resulting in low water-levels in the hydro-electric plant reservoirs.

Electricity on the Island had to be severely rationed, and was only allowed to military and essential civilian operations. The latter were hospitals, flourmills, olive-oil presses, bakeries, wineries and other food-processing plants. Water-supply systems were classed in the category of military requirements; other such requirements were hospitals, docks and shipyards, cement-plants, foundries, machine-shops and sulphur-mines.

Officers of the Electrical Division were withdrawn from Sicily in the Spring and the work is now in the hands of the Ministry of Public Works (Italian Government), and of the various Companies.

(b) Sardinia.

Electric undertakings in Sardinia escaped the damage that was experienced on the mainland of Italy. The plants, however, began to show the effects of lack of maintenance brought about by continued material shortages. Quantities of needed supplies and repair materials, have now been requisitioned, and information has been received that shipment can be expected in due course. Generally, the electrical situation on the Island can be considered as good.

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(c) Southern Italy.

Southern Italy has a story concerning undamaged plant that must remain unexplained, at least for the present, since the real facts have not yet been established.

In the Sila Mountains (Calabria) there is a group of hydro-electric generating plants known as the "Sila Group".

This capacity is 170,000 KW, and this was only slightly damaged. Repairs were effected shortly after the enemy was driven from the territory.

The enemy's failure to demolish the "Sila" plants contributed, in a way, to the success of Allied Military operations. The saving of this very large plant from destruction has been attributed to bands of Patriots preventing the Germans gaining access, and to the speed with which the Allied Forces conquered Southern Italy. The latter probably prevented the enemy from placing mines, which require time to prepare, in order to do an effective demolition. The plants are difficult to get at, and are situated in a mountainous, rugged section of the country.

The transmission-line system of South Italy was damaged by shell-fire and bombing. The main 150 KW system was, however, put back into operation within a few months. This line runs from the Sila plants northwards along the west side of Italy to Naples and along the east side to Taranto, Bari, and Foggia. It provided the necessary arteries for distribution, and to collect power from generating stations that were left undamaged, or had been repaired.

Before transmission service was available to the Naples area, in the autumn of 1943, power was obtained by utilizing the plants of submarines in Naples harbour. These plants helped to produce enough power to get part of the water-system operating, and give other services. An undamaged Diesel engine at the Volturmo Plant was also utilized.

The 45,000 KW Capuano steam-plant (Naples) was thoroughly mined by the enemy, but due to faulty detonation only portions were damaged. Repairs were started immediately by the Royal Navy, and the first unit of 15,000 KW was placed in service in May. The second unit of 15,000 KW began operating in August, and the third of 15,000 KW was restored in November 1944.

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Despite availability of the Sila Group the destruction of the other plants, and urgent military requirements for power, necessitated rigid control and rationing for all non-essential uses.

In order to observe the trends of load and power consumption in the various geographical and Company areas, a series of graphs was developed by which the situation in the respective areas could be readily observed. They proved invaluable to various authorities, and in various ways.

Since the main source of supply was the Sila group, water-levels in the storage reservoirs were plotted by months for the years 1941, 1942, 1943 and for each month of 1944. This made it possible to compare the daily level of the reservoirs with levels on the corresponding days in preceding years.

As a result of control over the use of power, and consequently the use of water, the reservoir position was improved to the point where the water in storage equalled the best year that had been experienced in the last four years. This programme has recently permitted the resumption of some important industries, and insures power to operate them.

(d) Central Italy.

During the winter of 1943-1944 while the combat-lines were more or less stabilized, the enemy was able to arrange for and put into effect a well-planned programme of mining and demolition of electric facilities. The work was obviously done by persons experienced in demolition, and very familiar with electric-power machinery.

From the enemy's viewpoint the results were excellent, and over 93% of plant capacity was destroyed.

The total effective generating capacity in Central Italy amounted approximately to one million KW. Of this only 57,000 KW was found to be in operating condition, and of this amount 30,000 KW was represented by two old thermal-plants located in the City of Rome. These thermal plants had previously been used only for an emergency service and were in extremely poor condition; furthermore, they had not been designed for continuous operation. Only a twelve-day fuel-supply was available at the plants. To continue any electric service in Rome it was necessary to haul coal at the rate of 250 tons per day by military and civilian trucks from scattered miscellaneous stock piles, the more important of which were over thirty miles from Rome. Diesel-engine fuel and lubricating oils were hauled by civilian transport from Naples and Anzio.

Rail-service to Rome was resumed on 4 July, thirty days after liberation, and the fuel problem became somewhat less critical.

The Electrical Division prepared a programme of rehabilitation to plants and transmission lines, with

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The Electrical Division prepared a programme of rehabilitation to plants and transmission lines, with special emphasis on those installations which could be returned to service within a reasonable period.

The Ministry of Public Works was kept fully informed of the progress of the rehabilitation programme.

The results of this programme are indicated in the following summary :-

KW (Plant capacity) in operation	June '44	31 Dec. '44	Estimated
			30/6/45
	57,000	170,000	342,000

= 39 =

(c) Northern Italy.

Fully 80% of the electric power-producing capacity of Italy is located in the north, as well as most large industrial operations.

Study is in hand, and officers who are to go to the Northern regions are developing plans in an endeavour to meet emergency conditions which may arise, similar to those encountered in Central Italy.

In view of the damage and demolition wrought by the enemy in Central Italy, considerable concern exists as to what the situation will be and whether the enemy will carry on the "scorched earth" policy in the North to the same extent, or even worse.

The importance of attempting to protect certain vital installations is fully realized, and steps have been taken; (for security reasons they cannot be discussed here). There is some reason to believe that the main problem in Northern Italy may be that of repairs to transmission systems.

(iii) Electric Rationing.

Power allocated by the Allied Forces Local Resources (Italian) Board is in turn rationed among users in the respective localities. Boards composed of members of various Military units and the Allied Com issue pass on all applications for electric service.

Priorities usually established are:-

(a) Military needs (including power for Public Water Supply)

(b) Essential civilian requirements:-

(i) - Hospitals.

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Priorities usually established are :-

- (a) Military needs (including power for Public Water Supply)
- (b) Essential civilian requirements :-
 - (1) - Hospitals.
 - (2) - Food-processing plants
 - (3) - Essential industries.
- (c) Non-essential uses, including commercial and residential requirements.

Early in 1944 it became evident that economies in the use of electricity for non-essential civilian uses would be imperative. To meet this situation arrangements were made by the Sub-Commission with the Italian Government through the Ministry of Public Works, to issue a Royal Decree directing all civilian users of electricity to reduce consumption. This Decree became law on April 5, 1944.

Much time was taken up in attending Rationing Committee meetings, and in devising ways and means for the curtailment of supplies in the many overloaded areas.

(iv)

Requisitioning of Plant from the United States

In accordance with A.I.H.Q. instructions Lt.Col. L.A. JERRY and Lt.Col. W.D. LARPER (of the Sub-Commission) proceeded to Washington on 24 September 1944 to present a requisition which had been approved by Allied Forces Headquarters for 60,000 KW of portable electrical generating plant for use in Italy.

The first reaction in Washington was that while plant had been ordered for other theatres as a military requirement, no request had previously been made for Italy, beyond that for small operational units; also that the requisition, being largely for civilian requirements, would necessarily have a lower priority than those of other Theatre Commanders (which had been rated as Military).

Washington finally agreed that 40,000 KW of plant should be accepted as Military, and 20,000 KW as a Civilian requirement.

After much discussion and many meetings it was finally agreed that the following plant would be made available to this Theatre (Italy) :-

- (a) 25,000 KW floating power-plant, delivery - April 1945 -
- (b) 15,000 KW portable steam-units (ex Chinese) - Feb/Mar 1945
- (c) 20,000 KW to be supplied when available.

Further meetings were held in London, but as all portable plants coming from the production lines were promised to SWART it was not possible to make any available for Italy.

While in London Lt.Col. LARPER arranged for the Emergency Pool of Spares held by the Central Electrical Board to be made available to Italy, as and when required.

Proceeding to SHARN, France, Lt.Col. LARPER

standard as accepted as Military, and 20,000 KW as a Civilian requirement.

After much discussion and many meetings it was finally agreed that the following plant would be made available to this Theatre (Italy) :-

- (a) 25,000 KW oil burning power-plant, delivery -
- (b) 15,000 KW portable steam-units (ex Chinese) - April 1945 -
- (c) 20,000 KW to be supplied when available - Feb/Mar 1945

Further meetings were held in London, but as all portable plants coming from the production lines were promised to SHARP it was not possible to make any available for Italy.

While in London Lt.Col. LAPPIN arranged for the Emergency Pool of Spares held by the Central Electrical Board to be made available to Italy, as and when required.

Proceeding to SHARP, France, Lt.Col. LAPPIN discussed the General electrical power situation with Lt.Col. W.M. CISHAM, the Utilities Officer of G-5 there.

The latter promised that if damage in Holland is not as bad as anticipated, he would see what allocation of plant could be made to Italy.

- (v) Electrical Reconstruction Committee (Italy).

There have been various Committees formed for the purpose of controlling the rehabilitation of electrical power facilities in Italy. The Electric Mission, the Central Electrical Board, and the Electrical Reconstruction Committee, all functioned in turn during 1944.

Finally, in October 1944 the Electrical Reconstruction Committee was formed (under A.F.H.Q. Administrative Memorandum 43) and this is the body under which operations are now being carried out.

Membership of the Committee includes representatives from :-

Chief Engineer	Allied Force Headquarters
Director of Works	" "
Allied Commission	" "
Peninsular Base Section	
Military Railway Service	
Military Districts No.1 and No.3	
Royal Navy	

The Secretary is an officer of the Electrical Division (of this Sub-Commission).

The Committee meets once a month for the purpose of reviewing progress of power-plant and transmission-line rehabilitation, carried out by the Sub-Commission. It sits as a coordinating group for all Military services, and discusses problems that might be hindering or delaying rehabilitation work.

A later A.F.H.Q. Memo No.53 (December) stated what was expected from each of the Services. The Allied Commission is charged with, and carries out, through the Sub-Commission the following functions :-

- (1) Furnishes a Secretariat for the Committee.
- (2) Is responsible for planning power rehabilitation throughout Italy.
- (3) Maintains liaison with A.A.I. (Allied Armies in Italy) and keep Army Commands informed as to the existence and condition of power plants and probable rehabilitation needs, in operational areas.
- (4) Ascertains power requirements from A.A.I., Army Districts (Am) and other sources.

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A letter A.F.H.Q. Memo No. 58 (December) stated what was expected from each of the Services. The Allied Commission is charged with, and carries out, through the Sub-Commission the following functions :-

- (1) Furnishes a Secretariat for the Committee.
- (2) Is responsible for planning power rehabilitation throughout Italy.
- (3) Maintains liaison with A.A.I. (Allied Armies in Italy) and keep Army Commands informed as to the existence and condition of power plants and probable rehabilitation needs, in operational areas.
- (4) Ascertains power requirements from A.A.I., Army Commands, P.B.S., Districts (Br) and other sources.
- (5) Submits plans for rehabilitation to the Chief Engineer A.F.H.Q., for consideration and approval of the Committee.
- (6) Using Italian Labour and local materials, directs, administers, and supervises construction work of rehabilitation, and operates the power-systems (except those projects specifically assigned to other agencies by A.F.H.Q.)
- (7) Issues all orders necessary to implement the programme to Italian power companies, or other civilian agencies.
- (8) Keep the Chief Engineer (A.F.H.Q.) advised of its activities.

(vi) Electric power allocations.

The power supplies of Italy are considered a local resource and "bid-offer" and allocated in the same way as all other commodities needed to further the war effort.

Strict control was necessary in order to keep consumption within the availability of power.

Allocation is done by the Electric Power Committee of the Allied Forces Local Resources (Italian) Board which meets monthly, and is made up of representatives of the Allied Commission, Peninsular Base Section, Allied Force Headquarters, Military Railway Service, Rome Area Allied Command, 15th Army Group, and Military Districts.

Officers of the Electrical Division are responsible for the coordinating of all bids for power from military districts, and keeping the Committee advised on the over-all power-supply situation in occupied Italy.

(vii) Financing of repairs (Electric systems damaged by war)

Financial problems confronting the Companies are of tremendous proportions. Vast sums of money are needed for rehabilitation of plants, lines and equipment; there is pressure for increased wages by personnel to meet increased living costs, and there is severe loss of income, due to destruction of factories, rationing, and movements of the civil population.

To meet this situation and to provide necessary working capital arrangements were made, through the Ministry of Public Works, Ministry of Finance, and the Finance Sub-Commission of A.C., to set up necessary procedures and controls, whereby funds would be made available to the Companies to carry on the rehabilitation work. Reconstruction of centers selected and more important plants and transmission lines are being handled in this manner. Those selected will contribute most to the war-effort, and provide power

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Arrangements have been made whereby Companies desiring to secure funds for suitable projects submit their applications directly to the Ministry of Public Works. These are later examined by the Sub-Commission, priorities agreed, and approval is given.

(viii) Utility Rates (Companies).

Utility Systems, public and privately owned, were referred to in para. 7 above on general lines. Gas and water companies, like electric, were in various difficulties, financially as well as operationally.

They began to file applications for permission to increase charges to consumers. Realizing the impracticability of determining these, based on established principles during present unstable conditions, the following procedure was adopted :-

- (1) No changes were permitted in basic rates.
- (2) Companies were allowed to apply a temporary flat percentage surcharge to the total amount of bills.
- (3) The amount of the percentage surcharge was determined by a simple formula which only required an examination of the company's "Profit and Loss Statement, for recent billing periods.
- (4) Only actual "out-of-pocket" expenditures were allowed. No allowances were made for depreciation, amortization, interest, dividends, or the cost of repairs or wear-and-tear.
- (5) Prior to expiration of the period for which the surcharge was authorized the companies again applied, and the matter was considered based on later actual data available.

The method allowed was a temporary expedient, inasmuch as legitimate capital costs usually represent a considerable percentage of the total cost of furnishing utility services.

When economic conditions were more stabilized the whole matter of these rates will have to be carefully studied, and simple basic rates established for the various classifications, based on the actual cost of each, plus a reasonable return on capital investment. No such

- (3) percent of surcharge to the total amount of bills. The amount of the percent of surcharge was determined by a simple formula which only required an examination of the companies "Profit and Loss" statement, for recent billing periods.
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When economic conditions are more stabilized the whole matter of these rates will have to be carefully studied, and simple basic rates established for the various classifications, based on the actual cost of each, plus a reasonable return on capital investment. No such condition obtained in Italy prior to the war. Charges for electricity, for example, have long been unnecessarily and ridiculously complicated. A simple illustration is the fact that an electric bill (residential service) which may amount to less than one dollar may be made up of five separate and distinct items. During the year applications for surcharges due it with included:-

35 - Electric Utilities
9 - Water
7 - Gas

The procedure has been an examination of original applications by the Sub-Commission and determination of appropriate surcharges for companies located in A.T.G. Territory. The Ministry of Public Works is then notified accordingly. In Italian Government Territory the surcharges are determined by the Ministry, with subsequent review by the Sub-Commission.

(ix) Procurement of supplies.

When the Central Electrical Board (C.E.B.) was dissolved in July 1944, its activities were transferred to this Sub-Commission. A branch of it was concerned with supplies (materials).

The matter of supplies is difficult and varied and not only involves manufacture, locating and procurement, but also movements, (road, rail and sea); preparing requisitions for imports; locating civilian stocks and arranging releases; obtaining and "screening" estimates of fuel (coal and oil), lubricants, transformer oil etc; consolidating the demands of the seven large Power Companies and their subsidiaries for onward transmission; arranging for manufacture of electrical parts; supplying building material for rebuilding power-stations; and more recently the branch undertook to supply cement requirements for road and bridge repairs, (in addition to cement required for power-plant rebuilding.) Para. 7 (above) referred also to this matter, and gave a typical example of delay.

One of the most difficult problems has been the procurement of insulating materials for re-winding transformers and alternators, many of which are out of action due to war-damage. Towards the end of 1944 some insulating material began to arrive; it is hoped that steady arrivals will be maintained in the future.

In the latter part of 1944 the Power Companies were asked to submit their 1945 plans for power-station rehabilitation. These have been carefully studied, and a large quantity of (import) materials have been ordered.

(x) Cooperation with Italian Government.

The necessity of eventually turning over the complete programme of electric rehabilitation to the Italian Government was fully realized, and every effort

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(x) Cooperation with Italian Government.

The necessity of eventually turning over the complete programme of electric rehabilitation to the Italian Government was fully realized, and every effort made to co-ordinate the work of the Sub-Commission with that of the Italian Ministry of Public Works. In furtherance of this the Electrical Division of the Ministry established offices adjacent to those of the Division, towards the end of the year, and in the same building (Ministero delle Corporazioni, Rome).

(xi) Central Italy, Electricity Scheme (Control).

For the first time, in Central Italy, the separate electric power companies will run as a unified system when the Central Scheme is inaugurated in January 1945. This was planned and sponsored by the Electrical Division, and will utilize the generation and transmission facilities of the different companies to form a single power-pool, and a common carrier to supply electricity to all points of greatest need.

= 45 =

Since Allied occupation (June 1944) the Companies had operated their enemy-damaged systems separately. Ordinarily the generators of each system run at maximum output, with no spare production capacity. Consequently, an instance of minor plant trouble frequently forced the temporary shutdown of an entire system. In the early days of occupation interruptions of this nature were to be expected. It follows, however, that the reliability of the service should increase as more plant is repaired, and as demands of important military and civilian consumers become more exacting. Unified operation involves the designation of sufficient reserve generating capacity, connected to the system, so that electric production may continue even though trouble occurs on a particular plant or machine. Much of the reserve equipment will be that contained in the bone fuel-burning plants, which when operating at reduced output, will consume correspondingly less quantities of coal and oil. Another advantage of joining the systems together is that generating units, no longer running always at maximum load, will be subject to less severe wear and tear.

A first essential of unified operation is the creation of a "Control Centre" which, through constant communication with the generating and switching stations, can issue all instructions. In the Control Centre will be Italian civilian engineers having a thorough knowledge of the plants and the transmission network, and of their peculiarities. The control engineers will be the "hour-by-hour dictators" of electric operation in Central Italy, and by their instructions will regulate the flow of power from the generating stations to all required points. In the "Control" are telephones permitting immediate communication with plants, and on the walls large maps of the system, so arranged that the position of switches and condition of machines is at all times shown.

Cooperation between the Companies is a second essential of the scheme. Under the direction of the

Another advantage of joining the systems together is that generating units, no longer running always at maximum load, will be subject to less severe wear and tear.

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Cooperation between the Companies is a second essential of the scheme. Under the direction of the Sub-Commission meetings of Companies representatives have been held, ideas exchanged and policies made, all in an atmosphere of complete cooperation.

From the beginning it is planned that the Central will be supervised closely by the Sub-Commission. As it progresses, however, less supervision is contemplated, and it will be administered more and more by the (Italian) Ministry of Public Works. The Minister has shown close personal interest in the Scheme, and his technical representatives are in constant touch with it.

Management will be by a Board composed of the Company representatives, with the Chief of the Electrical Division serving as Chairman. An important feature is that all the companies will, for the first time, be operating at a common frequency of 45 cycles. Up to now there have been two frequencies, 45 and 50 cycles. This difference has raised many obstacles to efficient operation, which the central scheme will remedy.

20. Personnel (Officers)Lists and locations

At the end of December the Sub-Commission had a total of 73 officers viz. 19 at H.Q., 51 in the Regions and 3 waiting re-assignment. A list is appended, and also an Appendix (A) which gives brief additional particulars.

It includes two Colonels and seven Lieutenant-Colonels, five of whom are American and four British. Opportunity is taken to note the long-standing anomaly that the Director (Am.) and the Deputy-Director (Br.) continued to hold only the rank of Lieut-Colonel, although two full Colonels and five Lieut-Colonels were under their direction. One Lt. Col. (Am.) was promoted early in January. This was the second such promotion within three months, both having been made without the Director or Deputy-Director knowing anything about them. This is a serious matter, subversive of good organisation and indeed also of discipline; it was partially corrected when the Director was promoted to Colonel on 17 January 1945.]

The Regions in December were as follows, each with a Col., Lt.Col., or Major as Regional Engineer (except Sardinia):-

Officers

Sicilia	1
Southern	6
Lazio-Umbria	12
Abruzzi-Marche	5
Sardegna (Italian control).....	=
Toscana	9
Emilia	4
Piemonte	6
Lombardia	3

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Officers

Sicilia	1
Southern	6
Lazio-Umbria	12
Abruzzi-Marche	5
Sardegna (Italian control)	=
Toscana	9
Emilia	4
Piemonte	6
Lombardia	3
Venezia	5
A.M.G. 5th Army	2
	54

The number of officers employed was, in general, an indication of the volume of work in hand in the Regions, as at the end of the year. The following lists indicate, inter alia, that each Region has (as far as possible) a properly proportioned "team" of specialist engineer officers, so that almost any class of problem can be dealt with :-

= 47 =

Nominal Roll of Officers at the end of 1944.

Army (Personnel)

Number

AT HEADQUARTERS:-

+ Lt. Col. Lewis A. Jenny
+ Lt. Col. George E. Rhodes
Major A.E. Freedy
J/Comd. A.K. King

02:5627 C.E. (A) Director Sub-Comm.
46671 R.E. (B) Deputy Director
161074 R.A. (B) Admin. Officer
287036 A.T.S. (B) Asst. Admin. Officer

Public Works Division

+ Lt. Col. V.S. Thompson
Capt. Rufus W. Shepherd
Major Norbert W. Hyland
Major C.P.B. Goldson
Capt. R.N.J. Hibbard
Mr. D. Solomon

R.C.E. (B) Chief, Pub. Wks. Div.
S.R. (A) Asst. to Chief P.W.D.
S.R. (A) P.W.O. South
R.A. (B) P.W.O.
R.E. (B) Public Works Off.
(A) Housing

0269899
05225877
104395
236667
Civilian

Electrical Division

+ Lt. Col. W.M. Lapper
Capt. Lewis W. Laughlin
Major Edmund J. Barry
Major Vinal S. Renton

294812 G.L. (B) Chief, Elect. Div.
0521392 S.R. (A) Asst. to Chief El. D.
0925044 C.E. (A) Elect. Gen. Dept.
0299699 Inf. (A) Operations & Tran.
Dept.

Major Robert A. Bell
Major H.W. Westwood

0328685 Sig. C. (A) Elect. Util. Officer
139095 R.E. (B) Utilities (General)
and Hydraulic.

Major L.G. Price

142572 R.E. (B) Supply Officer
(Atchd)

Capt. William E.
Tronmershausen

Capt. Paul W. Vannoy
Capt. Harry G. Best

0342407 P.A. (A) Elect. Util. Officer
0280920 C.E. (A) Elect. Util. Officer
86872 R.A. (B) Elect. Util. Officer

(Atchd. Abruzzi-Marche)

Capt. R.N.J. Hubbard Mr. D. Solomon	Civilian	(A) Housing
Electrical Division		
+ Lt. Col. W.M. Lapper	294812	G.L. (B) Chief, Elect. Div.
Capt. Louis W. Laughlin	0521392	S.R. (A) Asst. to Chief El. D.
Major Edmund J. Barry	0925044	C.E. (A) Elect. Gen. Dept.
Major Vinal S. Renton	0299699	Inf. (A) Operations & Tran. Dept.
Major Robert A. Bell	0328685	Sig. C. (A) Elect. Util. Officer
Major H.W. Westwood	139095	R.E. (B) Utilities (General) and Hydraulic.
Major L.G. Price	142572	R.E. (B) Supply Officer (Atchd)
Capt. William E. Trommershausen	0342407	P.A. (A) Elect. Util. Officer
Capt. Paul W. Vannoy	0280920	C.E. (A) Elect. Util. Officer
Capt. Harry C. Best	86872	R.A. (B) Elect. Util. Officer (Atchd. Muruzzi-Marche Region)
1st Lt. P.A. Scrolla	01551106	Ord. (A) Elect. Util. Officer

NOTE :- The four officers marked +, in the above lists, held the appointments noted continually from Sept. 1943 onwards i.e. since the Sub-Commission was formed in North Africa.

IN REGIONS :-Sicilia Region

Major D.A. Boyd 163541 R.E. (B) Regional Engineer

Southern Region.

Col. Lester J. Hansley 0174226, 2675 Regt. (A) Reg. Eng. Officer

Major William F. Chamberlin 03073335 P.A. (A) P.W.C. Liaison Off. N.2 District

Capt. D.K. Brown 0382133 C.A.C. (A) Highways
 Capt. Ralph A. Ryan 0520275 S.R. (A) Elect. Util. Officer
 Capt. F.M.H. Stephens 183578 R.E. (B) Highways
 Mr. H.H. Townsend Civilian (A) Reg. Eng. Staff.

Lazio-Umbria Region

Lt. Col. G. de C.E. 12396 R.E. (B) Regional Eng. Officer
 Findlay V.C. 181780 R.E. (B) Public Works Officer
 Major A.G. Evans 0519275 S.R. (A) Public Works Officer
 Major A.E. Michel 0383013 Inf. (A) Public Works Officer
 Capt. Warren F. Laughton
 Capt. Nathaniel M. Whitten

Capt. William R. Gentry 0376764 C.A.C. (A) Public Works Officer
 Capt. T.F. Spriggs 0224642 C.M.E. (A) Highways
 Capt. A.J. Green 0302832 F.A. (A) Highways
 Capt. E.F. Wade-Brown NONE P.L.D.G. (B) Highways
 Capt. J.W.L. Butcher 212800 R.A. (B) Elect. Util. Officer
 2nd Lieut. Peter F. Natale 265880 S-Lances. (B) Elect. Util. Officer
 Mr. Conrad H. Rapp 01691527 C.E. (A) Public Works Officer
 Civilian (A) Reg. Eng. Staff.

Abruzzi-Marche Region

Lt. Col. Latimer 0211151 C.E. (A) Reg. Eng. Officer
 Capt. J.H. Walsh 0522486 S.R. (A) Highways
 Major J.E. Foden 291969 G.L. (B) Elect. Util. Officer
 Major Edwin L. Shull 0335061 Inf. (A) Public Works Officer
 Mr. F.O. Griffith Civilian (A) Reg. Eng. Staff.

Lt. Col. G. Findlay V.C.
 Major A.G. Evans
 Major A.E. Michel
 Capt. Warren F. Loughton
 Capt. Nathaniel M. Whitten
 Capt. William R. Gentry
 Capt. T.F. Spriggs
 Capt. A.J. Green
 Capt. E.F. Wade-Brown
 Capt. J.W.L. Butcher
 2nd Lieut. Peter F. Natale
 Mr. Conrad H. Rapp

12396 R.D. (B) Public Works Officer
 181780 R.E. (B) Public Works Officer
 0519275 S.R. (A) Public Works Officer
 0383013 Inf. (A) Public Works Officer
 0376761 C.A.C. (A) Public Works Officer
 0224642 C.M.F. (A) Highways
 0302832 F.A. (A) Highways
 HOME P.L.D.S. (B) Highways
 212800 R.A. (B) Elect. Util. Officer
 265880 S-Lance. (B) Elect. Util. Officer
 01691527 C.E. (A) Public Works Officer
 Civilian (A) Reg. Eng. Staff.

Abruzzi-Marche Region

Lt. Col. Letimer
 Capt. J.H. Walsh
 Major J.E. Foden
 Major Edwin L. Shull
 Mr. F.O. Griffith

0211151 C.E. (A) Reg. Eng. Officer
 0522486 S.R. (A) Highways
 291969 G.I. (B) Elect. Util. Officer
 0335061 Inf. (A) Public Works Officer
 Civilian (A) Reg. Eng. Staff.

Sardegna Region

Now under Italian Control.

Toscana Region

Major P.S.L. Leo
 Lieut. L.J. Hodges
 Capt. T.R. Brownlee
 Capt. F.R.C. Stephens
 Capt. J.W. Perkins
 Capt. Hartwell J. Rossen
 Major G. Boucher
 Capt. A.G.A. Saul
 Major E.H. Richardson

181419 R.D. (B) Regional Eng. Officer
 117600 R.A. (B) Public Works Officer
 0152813 C.M.F. (A) Highways
 183578 R.T.R. (B) Elect. Util. Officer
 178091 R.E. (B) Public Works Officer
 0516746 S.R. (A) Elect. Util. Officer
 (Atchd. H.Q.)
 74496 R.A. (B) Liaison Officer No 1 District
 301428 G.I. (B) Highways
 0264535 F.A. (A) Public Works Officer
 = 49 =

Emilia Region

Major W.M. Spann	0260170	S.R.	(A)	Regional Eng. Officer
Major Wilfred H. Gamble	263395	G.L.	(B)	Public Works Officer
Major Richard F. Woebber	0338955	C.E.	(A)	Atchd. A.M.G. 5th Army
Capt. E.H. Rogers	0413238	C.E.	(A)	Elect. Util. Officer

Piemonte Region.

Lt. Col. C.R. Birchett	0902256	C.E.	(A)	Regional Eng. Officer
Major G.F. Buckley	146479	R.E.	(B)	Public Works Officer (Atchd. Lazio-Umbria Region)
Capt. J.A. Roub Jr.	0901613	Sig.C.	(A)	Public Works Officer
Capt. E.E. Smith	0520148	S.R.	(A)	P.W.O. Atchd. Toscana Region)
Major G.C. Eberle	0339841	C.E.	(A)	Highways Officer (Atchd. Toscana Reg.)
Major J.S. Bonnet		G.L.	(B)	Elect. Util. Officer

Lombardia Region.

Col. Clarence T. Bolick	0174447	F.A.	(A)	Regional Eng. Officer Promoted - Jan. 1945. (Atchd. Lazio-Umbria Reg.)
Major A. Crowther	161969	R.E.	(B)	Attached Toscana Reg.)
Major Harry Larson	0196584	C.E.	(A)	Atchd. Lazio-Umbria Reg.

Venezia Region.

Major W. Knight M.C.	141159	Essex Rept.	(B)	Regional Eng. Off. (Atchd. Toscana Region)
Capt. Edmund B. Feldman	0251776	S.R.	(A)	Public Works Officer (Atchd. Toscana Region)
Major A.G. Ferley	NONE	R.C.C.C.	(B)	Highways
Capt. J.S.C. Wilson-Heathcote	101636	I. Corps.	(B)	Highways att. A.M.G. 8th Army
Major Mallory O. Wooster	0236441	Sig.C.	(A)	Elect. Util. Officer (Atchd. Toscana Region)

Major J.S. Bennet

Lombardia Region.

Col. Clarence L. Bolick	0174447	F.A. (A)	Regional Eng. Officer Promoted - Jan. 1945. (Atchd. Lazio-Umbria Reg.)
Major A. Crowther	161369	U.E. (B)	Attached Toscana Reg.
Major Harry Larson	0196584	C.E. (A)	Atchd. Lazio-Umbria Reg.

Venezia Region.

Major W. Knight M.C.	141159	Essex Regt. (B)	Regional Eng. Off. (Atchd. Toscana Region)
Capt. Edmund B. Pellman	0251776	S.R. (A)	Public Works Officer (Atchd. Toscana Region)
Major A.C. Perley	NONE	R.C.O.C. (B)	Highways
Capt. J.S.O. Wilson- Heathcote	101636	I. Corps. (B)	Highways att. A.M.G. 8th Army
Major Mallory O. Wooster	0236441	Sig. C. (A)	Elect. Util. Officer (Atchd. Toscana Region)

A.M.G. 5th Army

Major Donald M. Gaither	0500954	C.M.P. (A)	Engineer Officer
Lieut. MacCallum	244067	R.E. (B)	Public Works Officer

Note: - P.W. = Public Works, duties

Elec. = Electrical

APPENDIX "A"

Past Assignments & Dates

Assignments

Name

December 1944

1. Major Edmund J. Barry (A) 0925044 C.E.	H.Q. Elec. Div.	Detached service F.B.S. 21/3/44 to 1/7/45 transmission line construction. Previously with Elect. Power Mission
2. Major Robert A. Bell (A) 0328685 Sig. C.	H.Q. Elec. Field Eng. (Florence)	H.Q. Elec. Division from June 44 to Jan. 45.
3. Capt. H.G. Best 86872 R.A.	Elec. Field Eng. (Rome)	H.Q. Elec. Division from 25 Oct. to Jan. 45.
4. Major D.A. Boyd 163541 R.E.	Sicilia Region (Palermo) Reg. Engr. from July 44.	Sicily since Sept. 1943
5. Capt. D.K. Brown 0382133 C.A.C.	Southern Region (Pub. Wks. Officer)	Southern Region since Nov. 44
		H.Q. Elec. Div. April 44

			Power Mission
2. Major Robert A. Bell (A) 0328685 Sig. C.	H.Q. Elec. Field Eng. (Florence)	H.Q. Elec. Division from June 44 to Jan. 45.	
3. Capt. H.G. Best 86872 R.A.	Elec. Field Eng. (Rome)	H.Q. Elec. Division from 25 Oct. to Jan. 45.	
4. Major D.A. Boyd 163541 R.E.	Sicilia Region (Palermo) Reg. Engr. from July 44.	Sicily since Sept. 1943	
5. Capt. D.K. Brown 0382133 C.A.C.	Southern Region (Pub. Wks. Officer)	Southern Region since Nov. 44	
6. Capt. J.W.L. Butcher 265880 S. Lanes	Lazio-Umbria Region (Elec. Util. Officer)	H.Q. Elec. Div. April 44 to May; Apulia Southern Region from May to Aug. 44; H.Q. A.C. Elec. Div. from Aug. 44.	
7. Capt. T.R. Brownlee 0152813 C.M.P.	Toscana Region (Pub. Wks. Officer)	Southern Region (Highways) Feb. '44 to July '44	
8. Major G. Boucher 74496 R.A.	Toscana Region (Liaison No. 1 Military District)	H.Q. Field Engineer June 44 to Sept. '44.	

Past Assignments & DatesAssignmentsName

9. Lt. Col. C.R. Birchett 0902256 C.E.	(A)	Regional Engineer Piemonte Region	AMG-5th Army Nov. 43 to June 44. Regional Engineer Rome Region June 44 to Oct. '44.
10. Major G.P. Buckley 146479 R.E.	(B)	Piemonte Region (under transfer to Trans. S/C Jan. 45)	Pub. Wks. Officer, Rome June to Sept. 44.
11. Major J.S. Bennett 0517954 S.R.	(A)	Piemonte Region (Temp. Duty Abruzzi- Marche Region) (Elec. Util. Officer)	Marche-Abruzzi Region (Elec. Off.) from Sept. 43 to Sept. 44
12. Col. C.P. Bolick 017447 F.A.	(A)	Regional Engineer Lombardia Region (Attached Lazio- Umbria Region)	Sicily Sept. 43 to Aug. 44.
13. Major W.F. Chamberlin 03073335 F.A.	(A)	Southern Region (Liaison No. 2 Military District)	Catanzaro (P.W. Officer) May - December 1944.
14. Major A. Crowther 161669 R.E.	(B)	Lombardia Region (Attached Toscana Region) (Elec. Util. Officer)	April 44 to 31 Oct. 44 (Sicily)
15. Capt. A.E. Duran 0228522 Sig C.	(A)	(Elect. Field Engr.) (Florence)	H.Q. (Elec. Div.) Oct. 44 to January 45.
	(B)	Lazio-Umbria Region	Lazio-Umbria from June 1944

017047 F.A.	Lombardia Region (Attached Lazio- Umbria Region)	to Aug. 44.
13. Major W.F. Chamberlin 03073335 F.A.	Southern Region (Liaison No. 2 Military District)	Catanzaro (P.W. Officer) May - December 1944.
14. Major A. Crowther 161669 R.E.	Lombardia Region (Attached Toscana Region) (Elec. Util. Officer)	April 44 to 31 Oct. 44 (Sicily)
15. Capt. A.E. Duran 0228522 Sig.C.	(Elect. Field Engr.) (Florence)	H.Q. (Elec. Div.) Oct. 44 to January 45.
16. Major A.G. Evans 181780 R.E.	Lazio-Umbria Region Pub. Wks. Officer	Lazio-Umbria from June 1944 (Pub. Wks. Officer).
17. Major G.C. Eberle 0339841 C.E.	Piemonte Region (Att: Toscana Region) (Pub. Wks. Officer)	Since Oct. '44.
18. Lt. Col. G. de C.E. Findlay V.C. 12396 R.E.	Regional Engineer Lazio-Umbria Region	Region 4 - H.Q. (then at Naples) & planning for Rome & Lazio-Umbria Region. Oct. 43 to June '44

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Past Assignments & DatesAssignmentsName

19. Major J.E. Foden 291969 G.L.	(B)	Abruzzi-Marche Reg. (Elec.Util. Officer)	Since Nov. 43.
20. Capt. E.B. Feldman 0251776 S.R.	(A)	Venezia Region (Att. Toscana Reg.)	At H.Q. Oct. 43 Jan. 44. Military H'ways, Jan. to July 44. (Region 3)
21. Capt. W.R. Gentry 0224642 C.M.P.	(A)	Lazio-Umbria Reg. (Pub. Wks. Officer)	Pub. Wks. Officer H.Q. Dec. 43 until July '44
22. Capt. A.J. Green P.L.D.G.	(B)	Lazio-Umbria Reg. (Pub. Wks. Officer)	Since Sept. '44.
23. Mr. F.O. Griffith Civilian American		Abruzzi-Marche Reg. (Adm. Officer)	Adm. Officer (for Reg. Engineer) Abruzzi- Mache-since Nov. '44.
24. Major W.P. Gamble 263396 G.L.	(B)	Emilia Region (Pub. Wks. Officer)	H.Q. Sept. 43 to May 44 Sicily May to Aug. 44
25. Major C.P.B. Goldson 104395 R.A.	(B)	Liguria Region Att: Lazio-Umbria. (Pub. Wks. Officer)	Joined S/C Dec. 44
26. Major D.M. Gaither	(A)	A.M.G. Fifth Army	A.M.G. 5th Army

22. Capt. A.J. Green P.L.D.G.	(B)	Lazio-Umbria Reg. (Pub.Wks. Officer)	Since Sept. '44.
23. Mr. F.O. Griffith Civilian American		Abruzzi-Marche Reg. (Adm. Officer)	Adm. Officer (for Reg. Engineer) Abruzzi- Mache-since Nov. '44.
24. Major W.P. Gemble 263396 G.L.	(B)	Emilia Region (Pub.Wks. Officer)	H.Q. Sept. 43 to May 44 Sicily May to Aug. 44
25. Major C.P.B. Goldson 104395 R.A.	(B)	Liguria Region Att: Lazio-Umbria. (Pub.Wks. Officer)	Joined S/O Dec. 44
26. Major D.M. Gaither 0500954 C.M.P.	(A)	A.M.G. Fifth Army (Pub.Wks. Officer)	A.M.G. 5th Army since Mar. '44.
27. Major N.W. Hyland 0525877 S.R.	(A)	H.Q. (Pub.Wks. Officer)	Pub.Wks. Field Officer H.Q. since Dec. 1943
28. Capt. R.N.J. Hibbard 236667 R.E.	(B)	Southern Region (Pub.Wks. Officer)	Southern Region & i/c Military Highways; since May. '44.

<u>Name</u>	<u>Assignments</u>	<u>Past Assignments & Dates</u>
29. Col. L.J. Hensley 0174226 C.E.	(A) Southern Region (Reg. Engineer)	Regional Engineer, Southern Region since No. '43.
30. Capt. L.J. Hodges 117600 R.A.	(B) Toscana Region (Pub. Wks. Officer)	Pub. Wks. Officer; Sicily from Dec. 43 to July '44.
31. Col. L.A. Jenny 0245627 C.E.	(A) H.Q. Director of Sub-Commission	Held appointment since Sept. 43 (formation of S/C in N. Africa)
32. J. Comd. A.K. King 287036 A.T.S.	(B) H.Q. (October 44.)	
33. Major W. Knight M.O. 141159 Essex. Regt.	(B) Regional Engineer Venetia Region (Att: Toscana Reg.)	Region 2 (as Regional Engineer) most of 1944 (Bari)
34. Lt. Col. W.M. Lapper 294812 G.L.	(B) H.Q. Chief, Elec. Div.	Held appointment since Sept. 1943 (formation of S/C in N. Africa).
35. Major L.W. Laughlin 0521392 S.R.	(A) H.Q. Elec. Div.	Since Nov. 1943

32. J. Comd. A.K. King 287036 A.T.S.	(B)	H.Q. (October 44.)	
33. Major W. Knight M.C. 141159 Essex. Regt.	(B)	Regional Engineer Venetia Region (Att: Toscana Reg.)	Region 2 (as Regional Engineer) most of 1944 (Bari)
34. Lt. Col. W.M. Lapper 294812 G.I.	(B)	H.Q. Chief, Elec. Div.	Held appointment since Sept. 1943 (formation of S/C in N. Africa).
35. Major L.W. Laughlin 0521392 S.R.	(A)	H.Q. Elec. Div.	Since Nov. 1943
36. Capt. W.P. Laughton 0383013 Inf.	(A)	Lazio-Umbria Region (Pub. Wks. Officer)	Since August 1944.
37. Lt. Col. Latimer 0211151 C.E.	(A)	Regional Engineer Abruzzi-Marche Reg.	Since Jan. 1944.
38. Lt. Col. P.S.L. Lee 181419 R.E.	(B)	Regional Engineer Toscana Region	Since June 1944.

Past Assignments & DatesAssignmentsName

39. Major A.E. Michel 0519275 S.R.	(A)	Lazio-Umbria Reg. (Pub.Wks. Officer)	5th Army A.M.G. Mar. '44 to June '44.
40. Lieut. J.M. Mac Callum 244067 R.E.	(B)	A.M.G. Fifth Army (Pub.Wks. Officer)	Since August 1944.
41. 2/Lt. P.F. Natale 0691527 O.E.	(A)	Lazio-Umbria Reg. (Pub.Wks. Officer)	H.Q. Jan. to Oct. '44 (then Commissioned)
42. Major A.G. Porley R.C.O.C.	(B)	Venezia Region (Pub.Wks. Officer)	In Abruzzi-Marche Reg. and H.Q. Feb. '44 to June '44 Lazio-Umbria Region (Hqys) to Sept. '44
43. Major A.E. Preedy 161074 R.A.	(B)	H.Q. Admin. Officer	Since March 44.
44. Capt. J.W. Perkins 173091 R.E.	(B)	Toscana Region (Pub.Wks. Officer)	Since Oct. 1944
45. Major L.G. Price 142572 R.E.	(B)	Attached H.Q. Elec. Div. from A.F.H.Q. (Assignment requested)	

42. Major A.G. Porley R.C.O.C.	(B)	Venezia Region (Pub. Wks. Officer)	In Abruzzi-Marche Reg. and H.Q. Feb. '44 to June '44 Lazio-Umbria Region (Hqys) to Sept. '44
43. Major A.E. Preedy 161074 R.A.	(B)	H.Q. Admin. Officer	Since March '44.
44. Capt. J.W. Perkins 173091 R.E.	(B)	Toscana Region (Pub. Wks. Officer)	Since Oct. 1944
45. Major L.G. Price 142572 R.E.	(B)	Attached H.Q. Elec. Div. from A.F.H.Q. (Assignment requested)	
46. Lt. Col. G.E. Rhodes 46671 R.E.	(B)	H.Q. Deputy Director	Held appointment since Sept. 1943 (formation of S/C in N. Africa).
47. Major V.S. Renton 0299699 Inf.	(A)	H.Q. Elec. Div.	Elect. Div. H.Q. since March 1944. Previously with Elec. Power Mission
48. Major R.A. Ryan 0520275 S.R.	(A)	Southern Region Elec. Util. Officer	H.Q. Elec. Div. April '44 to Oct. '44 Southern Reg.

Past Assignment & DatesAssignmentsName

49. Mr. C.H. Rapp Civilian American	Lazio-Umbria Reg. (Admin. Officer)	Catanzaro, (S. Region) Nov. Dec. 44.
50. Major H.J. Rosson 0516746 S.R.	Toscana Region (Attached H.Q. Elec. Div.)	A.M.C. 5th Army Jan. to May 44, H.Q. Elec. Div. Oct. 44, later Toscana Region.
51. Major E.H. Richardson (A) 0264535 F.A.	Toscana Region (Pub. Wks. Officer)	Since Aug. 1944.
52. Capt. E.H. Rogers (A) 0413238	Emilia Region (Elec. Util. Officer)	H.Q. (Elec. Div.) from April to July.
53. Major J.A. Robb, Jr. (A) 0901613 Sl3. C.	Piemonte Region (Pub. Wks. Officer)	Lazio-Umbria Region June to Oct. '44.
54. Capt. R.W. Shepherd (A) 0269899 S.R.	H.Q. (Pub. Wks. Div.)	Asst. to Chief. Pub. Wks. Div. H.Q. since Feb. 1944
55. Mr. D. Solomon Civilian American	H.Q. (Pub. Wks. Div.)	H.Q. (Housing) since Oct. 1944.

52. Capt. E.H. Rogers 0413238	(A)	Emilia Region (Elec.Util. Officer)	H.Q. (Elec.Div.) from April to July.
53. Major J.A. Robb, Jr. 0901613 Sig. C.	(A)	Piemonte Region (Pub.Wks. Officer)	Lazio-Umbria Region June to Oct. '44.
54. Capt. R.W. Shepherd 0269899 S.R.	(A)	H.Q. (Pub.Wks.Div.)	Asst. to Chief. Pub.Wks. Div. H.Q. since Feb. 1944
55. Mr. D. Solomon Civilian American		H.Q. (Pub.Wks.Div.)	H.Q. (Housing) since Oct. 1944.
56. 1st Lieut. P.A. Sbrrolla 01551106 Ord.	(A)	Elect. Field Enr. (Hence)	H.Q. April-May and Southern Region
57. Capt. F.M.H. Stephens 183578 R.E.	(B)	Southern Region (Pub.Wks. Officer)	Region ? (Bari) since July 44.
58. Capt. T.F. Spriggs 0302832 F.A.	(A)	Lazio-Umbria Region (Pub.Wks. Officer)	Since June '44.

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<u>Name</u>	<u>Assignments</u>	<u>Past Assignments & Dates</u>
59. Major E.L. Shull 0335061 Inf.	(A) Abruzzi-Marche Reg. (Pub.Wks.Officer)	Since Dec. 1944
60. Capt.P.R.C.Stephens 183576 R.T.R.	(B) Toscane Region (Elec.Util.Officer)	Lazio-Umbria May 44 to July 44.
61. Capt.A.G.A. Saul 301428 G.I.	(B) Toscane Region (Pub.Wks.Officer)	Southern Region i/c Military Highways.
62. Lt.Col. W.M. Spann 0260170 S.R.	(A) Regional Engineer Emilia Region	Sardinia - Oct. 43 - July 44 Regional Engr.
63. Major E.E. Smith 0520148 S.R.	(A) Piemonte Region (Attached Toscana Reg.) (Pub.Wks.Officer)	Sardinia Jan. 44 to Sept. 44 (Public Works)
64. Lt.Col.V.S.Thompson R.yal Canadian Engineers	(B) H.Q.Chief, Public (& Military) Works Div.	Held appointment since Sept. 43 (formation of S/C in N. Africa).
65. Capt. W.E. Trommershausen 0342407 F.A.	(A) H.Q. Elec.Field Engr. (Rome)	H.Q. (Elec.Div.) since Sept. '44.

62. Lt. Col. W.M. Spann 0260170 S.R.	(A)	Regional Engineer Emilia Region	Sardinia - Oct. 43 - July 44 Regional Engr.
63. Major E.E. Smith 0520148 S.R.	(A)	Piemonte Region (Attached Toscana Reg.) (Pub. Wks. Officer)	Sardinia Jan. 44 to Sept. 44 (Public Works)
64. Lt. Col. V.S. Thompson Royal Canadian Engineers	(B)	H.Q. Chief, Public (& Military) Works Div.	Held appointment since Sept. 43 (formation of S/C in N. Africa).
65. Capt. W.E. Trommershausen (A) 0342407 F.A.	(A)	H.Q. Elec. Field Engr. (Rome)	H.Q. (Elec. Div.) since Sept. '44.
66. Mr. H.H. Townsend Civilian American		Southern Region (Adm. Officer)	Southern Region since Oct. 44
67. Capt. P.M. Vannoy 0280920 C.E.	(A)	H.Q. Elect. Field Engr. (Rome)	Since Oct. 44
68. Major H.W. Westwood 139095 R.E.	(B)	H.Q. Elect. Div. (Water & Gas)	Since May 44.

<u>Name</u>	<u>Assignments</u>	<u>Past Assignments & Dates</u>
69. Capt. N.M. Whitton 0376761 C.A.C.	(A) Lazio-Umbria Reg. (Pub.Wks.Officer)	Since Nov. 44
70. Capt. E.P. Wade-Brown 212800 R.A.	(B) Lazio-Umbria Reg. (Elec.Util.Officer)	H.Q. A.C. May '44. Later Lazio-Umbria
71. Capt. J.H. Walsh 0522486 S.R.	(A) Abruzzi-Marche Reg. (Pub.Works Officer)	Since Jan. 1944
72. Major R.P. Weeber 0338955 O.E.	(A) Emilia Region (Attached A.M.G. 5th Army) (Pub.Wks.Officer)	Southern Region from Jan. '44.
73. Capt. J.S.C. Wilson- Heathcote 101636 Int. Corps.	(B) Venezia Region (Attached A.M.G. 8th Army) (Pub.Wks.Officer)	Region 4. May to August '44.
74. Major M.O. Wolster 0236441 Sig.C.	(A) Venezia Region (Attached Toscana Reg.) (Elec.Util.Officer)	H.Q.Elec.Div. from June to Aug. 1944
Col. Edwards E.J.	(B) Returned to England	Regional Eng.Reg. 4 Oct. 43 to Reg.Eng.Reg. 12

72. Major R.P. Weeber 0338955 C.E.	(A)	Emilia Region (Attached A.M.G. 5th Army) (Pub.Wks. Officer)	Southern Region from Jan. '44.
73. Capt. J.S.C. Wilson- Heathcote 101636 Int. Corps.	(B)	Venezia Region (Attached A.M.G. 8th Army) (Pub.Wks. Officer)	Region 4 May to August '44.
74. Major M.O. Wolster 0236441 Sig.C.	(A)	Venezia Region (Attached Toscana Reg.) (Elec.Util. Officer)	H.Q. Elec. Div. from June to Aug. 1944
=====			
Col. Edwards E.J.	(B)	Returned to England	Regional Eng. Reg. 4 Oct. 43 to Reg. Eng. Reg. 12 Oct. 1944
Lt. Col. Laboon 0510616 C.M.P.	(A)	(Civil Affairs Officer)	Chief P.W. Div. Nov. 43 to April 44.
Maj. C.L. Hasie 0214969 Eng. Res.	(A)	(to U.S. Oct. 1944)	P.W. Officer; H.Q., May to Oct. 1944
Major H. Larson 0196584 C.E.	(A)	(to U.S. Jan. 1944)	P.W. field Officer H.Q.

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