

Declassified E.O. 12356 Section 3.3/NND No. 785019

ACC 184/PWU

10000/150/498

10000/150/498

ROME TRAMWAYS
OCT. 1944 - JAN. 1945

RECEIVED
P.W. & U. S/C.A.C.
13 JAN 1945 194

HOME AREA ALLIED COMMAND
APO 794, U. S. Army
ELECTRICITY CONTROL BOARD

RTM/WHB/72
13 January 1945

SUBJECT: Sunday Morning Street Car Service
HRE and ASEA Power Plant Employees.

TO : Allied Commission, Public Works & Utilities
Sub Commission, Electrical Division, APO 394

1. Reference your letter 25 December 1944.

2. The power situation is now such that the Electricity Control Board is left with no alternative but to make drastic reductions in the existing allocations. You will appreciate, therefore, that the Board is in no position to consider new applications at the present time.

3. Our Engineer Section RAAC has been informed of your request and asked to comment.

4. Could not the Transportation Sub-Commission help with other form of transport until the electricity situation has improved sufficiently to warrant the granting of this request?

W.R. Hughes

W.R. HUGHES
Major RAAC
Chairman

Copy to:
Engineer Section, RAAC

Det Col. Cooper

Pls take up and prepare reply

3523

*HQR
Major Ransom
see Folio 157
file 060
Probably this should
be taken up at the
next meeting of the
Board. R.A.C.
16 Jan 45*

Tel. 488081

HEADQUARTERS ALLIED COMMISSION
Public Works and Utilities Sub-Commission
A.P.O. 394

FB/10

8

Reference : 080/PWU

23 Dec. 44

Subject : Street car service on Sunday morning
S.F.E. & A.C.E.A. Power Plant employees

To : ELECTRICITY CONTROL BOARD - R.A.A.C. - APO 434

- 1) - Attached request for a special street car service needed for ACEA and SFE co. personnel working in S. Paolo and Montemartini thermoelectric stations.
- 2) - Inquires show that a single-ride service should be made available beginning at 0845 from the starting station.
- 3) - Will you please discuss this matter at the next meeting of Electricity Control Board.

Copy to file 184

W. E. LAPPER
Lt-Colonel
Chief Elec. Div.

cc : REGIONAL COMMISSIONER LAZIO-UMBRIA REGION
(Attention Regional Engineer)

3522

RECEIVED
P.W. & U.S./C.A.C.
19 DEC 1944 184

In caso telegrafico: AGEA - Roma
Telefono dello Stato: 43.343-43.344
Conto Corrente Postale: 1/2902

AZIENDA GOVERNATORIALE
ELETTRICITÀ ED ACQUE

Sezione Unica Termica

N. 249 di prot.

ROMA, (103) 18 Dicembre 1944 Ass XX
VIA MILANO, 42

ALLA COMMISSIONE ALIMENTAZIONE
SEZIONE P.W.U.

c.p. c. ALLA AZIENDA TRAMVIE AUTOBUS DEL COMUNE DI

R O M A

In mancanza del servizio Tramvie nei giorni di Domenica, questa Azienda Comunale Elettrica ed Acque (ACEA) e la Società "Roma di Elettricità" (S.R.E.) hanno richiesto alla Azienda Tramvie e Autobus del Comune di Roma l'effettuazione di una corsa speciale a percorse circolare la domenica mattina per uso degli operai addetti alle due Centrali Termoelettriche "Montemartini" e "San Paolo".

L'Azienda Tramvie e Autobus si è dichiarata disposta ad effettuare tale servizio, come già effettua l'attuale servizio normale, ma ha fatto presente che per realizzarlo le occorrerebbe ottenere il corrispondente aumento della dotazione di energie, in ragione di 140 Kwh per ogni giorno.

L'A.G.E.A. e la S.R.E. pregano codesta Commissione di voler esaminare benevolmente la richiesta e di concedere il supplemento in questione, destinato ad agevolare gli operai addetti al servizio produzione energia elettrica nel portarsi sul luogo del lavoro e nel ritornare alla propria abitazione.

Si resta in attesa di certosi notizie al riguardo.

Distinti saluti.

Ing. ENRICO RUGGERI 25014

N. 24 di pret.

ALLA COMMISSIONE ALLEATA

SEZIONE P.W.U.

S.P. C. ALLA AZIENDA TRAMVIE AUTOBUS DEL COMUNE DI

R O M A

In mancanza del servizio Tramviario nei giorni di Domenica, questa Azienda Comunale Elettrica ed Acqua (A.C.E.A.) e la Società "Reione di Elettricità" (S.R.E.) hanno richiesto alla Azienda Tramvie e Autobus del Comune di Roma l'effettuazione di una corsa speciale a percorso circolare la domenica mattina per uso degli operai addetti alle due Centrali Termoelettriche "Montemartini" e "San Paolo".

L'Azienda Tramvie e Autobus si è dichiarata disposta ad effettuare tale servizio, come già' effettua l'attuale servizio regolare, ma ha fatto presente che per realizzarlo le occorrerebbe ottenere il corrispondente aumento della dotazione di energie, in ragione di 140 Kw. per ogni giorno.

L'A.C.E.A. e la S.R.E. pregano codesta Commissione di voler esaminare benevolmente la richiesta e di concedere il supplemento in questione, destinato ad agevolare gli operai addetti al servizio produzione energia elettrica nel portarsi sul luogo del lavoro e nel ritornare alla propria abitazione.

Si resta in attesa di cortesi notizie al riguardo.

Distinti saluti.

Dr. C. Capper
Dr. C. Capper
Dr. C. Capper

Ing. MARIO RUSSINI
35214
Dr. C. Capper
Dr. C. Capper

Perché nuove limitazioni ferroviarie?

L'ATAC ha comunicato che il servizio ferroviario sarà ridotto a 120 treni al giorno, con un numero di treni che sarà di 115 e in seguito di 110. Il servizio sarà ridotto a 120 treni al giorno, con un numero di treni che sarà di 115 e in seguito di 110.

Il servizio ferroviario sarà ridotto a 120 treni al giorno, con un numero di treni che sarà di 115 e in seguito di 110. Il servizio sarà ridotto a 120 treni al giorno, con un numero di treni che sarà di 115 e in seguito di 110.

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COMUNICAZIONI E TRASPORTI

ROMA DEVE CONTINUARE ad essere isolata come è ora?

In tema ad un problema di cui non sarà facile tornare ad occuparsi è quello relativo alle comunicazioni ferroviarie civili specie per passeggeri da e per Roma.

Sabato dopo la liberazione della Capitale l'era d'oro del ripristino di tali comunicazioni una da allora, tranne la notizia della pubblicazione di un orario ferroviario da cui, ovviamente, è esclusa la zona di Roma, non si è saputo più nulla.

Taciamo gli organi alleati, l'oscurità ministeriale, le comunicazioni, ma non taciamo e non possiamo tacere i romani che chiedono a viva voce che Roma sia finalmente collegata ferroviariamente con le altre città.

Si comprendono le necessità militari alleate, la provvidenza emessa come più che nota, e conosciuta da tutti in guerra, come prima quella italiana quando era ancora in guerra con gli alleati, ma è appreso il caso di ricordare che nonostante le esigenze militari nessuna nazione ha mai tollerato l'isolamento del traffico ferroviario passeggeri civili come è stato invece fatto per Roma. Una pensata di traffico e servizio ferroviario.

Che sia proprio l'isolamento ferroviario a causare qualche coppia di treni da e per Roma spiega per il momento, non crediamo.

Se si pensa che prima del ripristino della linea Roma-Napoli, via Formello, si muovevano nel dicembre 1949 treni al giorno (civili e militari) e a valle, raggiungevano i 170 se ne può dedurre che si tratta più che altro di linee ferroviarie.

Si obietterà che allora c'era il doppio binario, c'era il materiale rotabile, c'erano i servizi efficienti ecc. ecc. ma si può osservare che per ottenere almeno un 5 per cento per i civili, lavoratori e tecnici italiani non aspettano che il via per ricostruire ciò che manca e soprattutto per ripristinare il servizio.

To: Capt Laughlin
P.W.S.C.

5

HQ AG

From: Ing. Ransom (Corporal)

Streetcars grid on March 15th 1944

3519

ATAC. SM.

Edizioni Verdesi

RETE AUTOFILOTRANVIARIA

(AL 15 MARZO 1944)



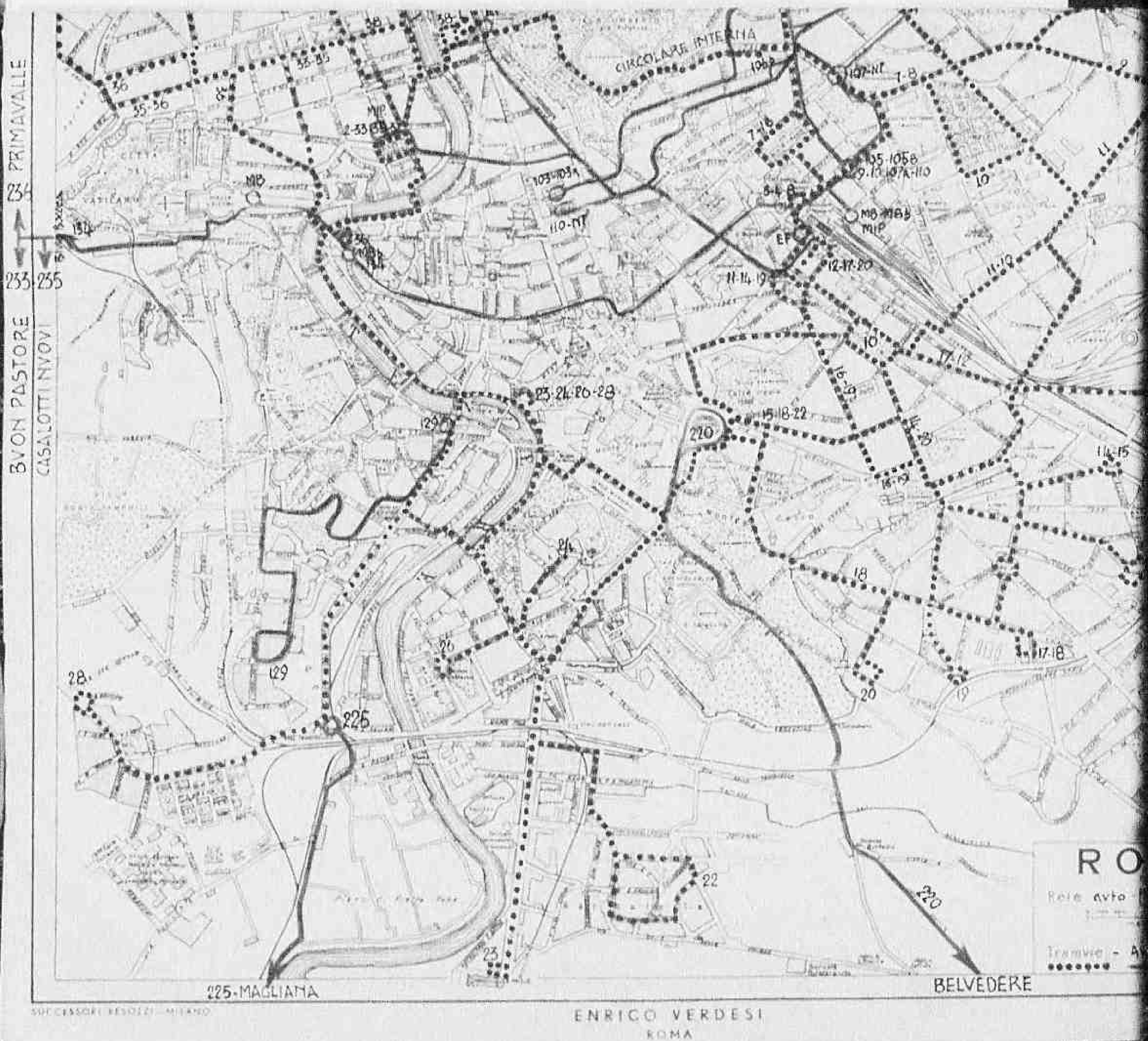
TE AVTOFILOTRANVIARIA

(AL 15 MARZO 1944).

040 XVIII



785019



2114

Declassified E.O. 12356 Section 3.3/NND No. 785019



ENRICO VERDESI
ROMA

AOP/elo

184 C2

4

HEADQUARTERS ALLIED COMMISSION
APO 394
Transportation Sub-Commission

4 November 1944

Ref : 476701

Our Ref : AO/TH/106

TO : Ministry of Communications
Private Railways

SUBJECT : S.T.E.F.E.E.

1. The impending decree to increase fares 100% will enable this Company to increase its rates on its extra-urbane lines.

2. Will you please say what recommendations you have in regard to the Rome City fares.

3. As papers on the subject were handed your representative some time ago, will you please let me have your considered remarks at an early date.

John C. Adams
D.S. ADAMS
Colonel C.E.
Director Tn. Sub-Comm.

183-112 064

Copy to : P.W.&U. S/C. - (your AOC/064 PWU dated 31 Oct. refers).
Economic Section
Finance S/C.

3517

Noted by [signature]

NOTE
[signature]

4 Nov 44

Data on Rome from service.

A.T.A.G.	KWH	Actual		Allotment
		AM Demand	PM Demand	
23 Oct 44				
24 Oct 44				
22 Oct 44	40,500	4500	4000	
29 Oct 44	34,500	3500	3700	3500
Note: - 200 kw to be cut from P.m. peak				
				3516

85/86

HEADQUARTERS
LAZIO-EMILIA REGION A.M.C.
(Engineering Division)

ARO 394

Rome, 23 October 1944.

TO : Azienda Tramvie Autibus Comunali

Via Volturmo - Rome.

SUBJECT : Rome Area Electric traction.

FILE No : E4/ENG/716.1. (to quote in reply)

The Peak load taken by your tram and trolleybus system as measured at the outgoing feeders of San Paolo will not exceed the amount shown on the attached diagrams.

This revised schedule of peak loads has been approved by Rome Area Allied Command and will become effective on Tuesday 24th October.

For Regional Engineer

Capt. Langford
(SOM) *W. J. R.*
27/10

W. J. R. WIDE-BROWN R.A.
Chief E & M Section.

Inclosures :

3 charts of Peak loads.

Rome, 23 October 1944.

TO : Azienda Trenvie Autibus Comandante
Via Valturmo - Rome.
SUBJECT : Rome Area Electric traction.
FILE NO : RA/ENG/716.1. (to quote in reply)

The Peak load taken by your tram and trolleybus system as measured at the outgoing feeders of San Paolo will not exceed the amount shown on the attached diagram.

This revised schedule of peak loads has been approved by Rome Area Allied Command and will become effective on Tuesday 24th October.

For Regional Engineer

Capt. Langford

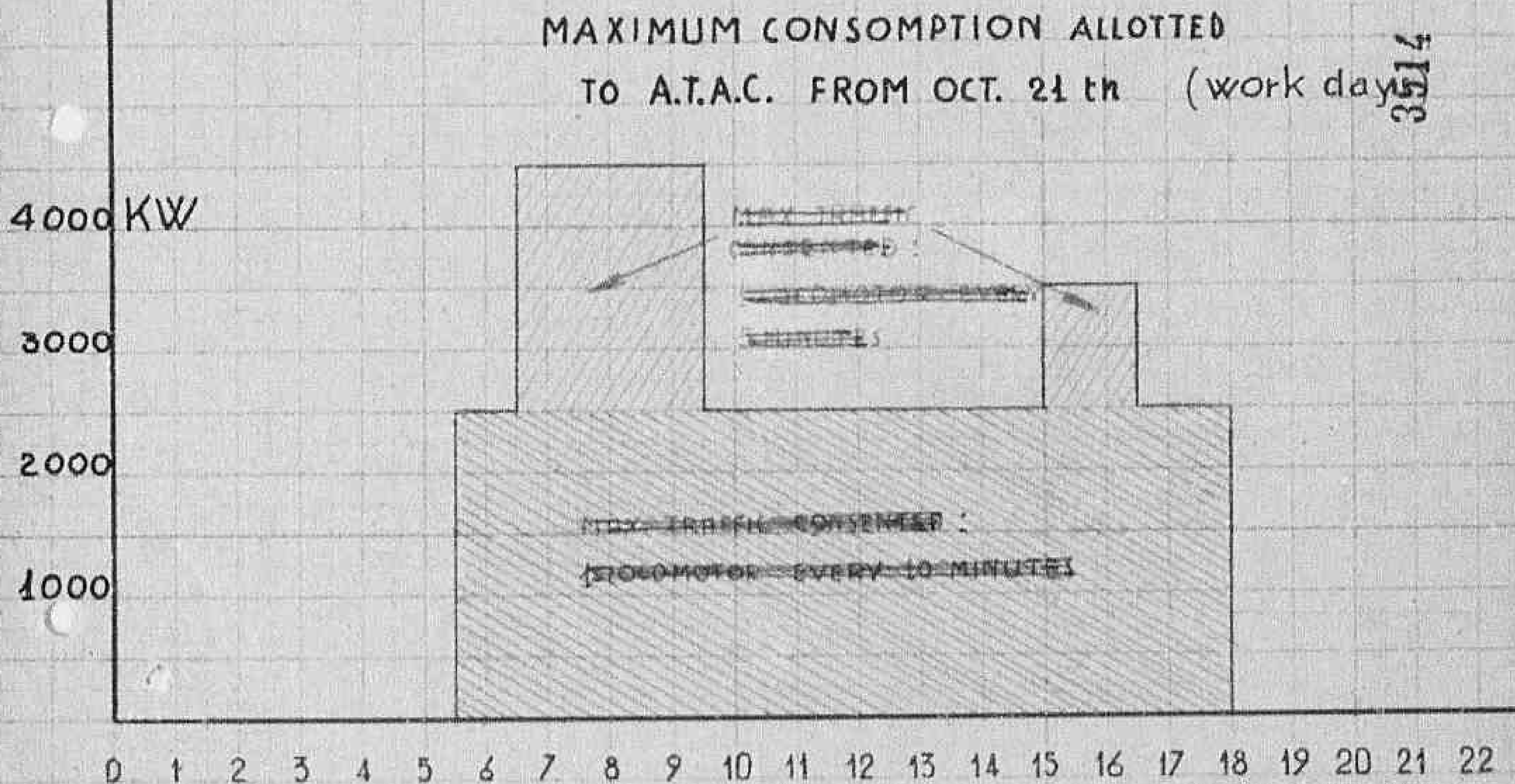
(Seen) 27/10
Lt. S.P. TADE-BROWN R.A.
Chief E & M Section.

Inclomures :

2 charts of Peak loads.

3515

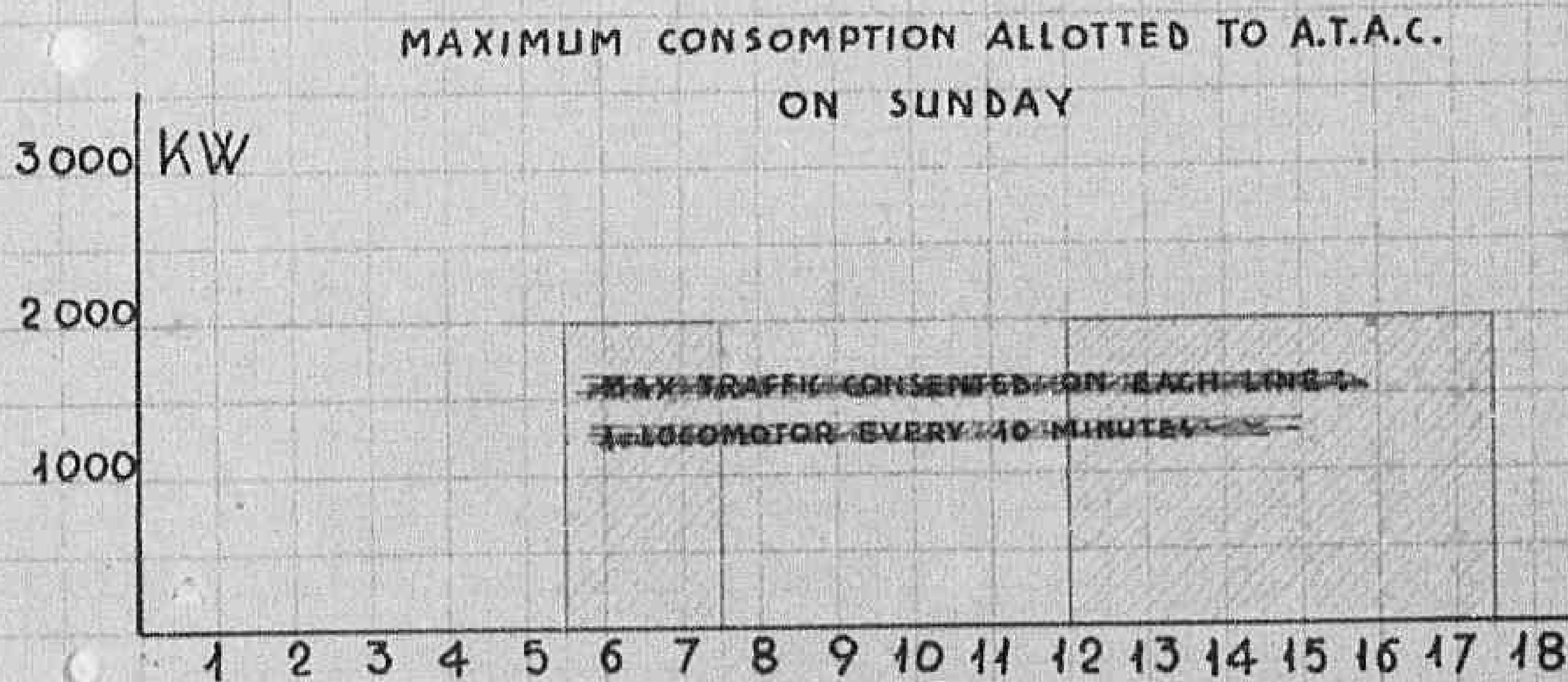
2319



3514

ROMA 20 Oct. 1944

LT. EP WADE-BROWN
Chief of E. & M. Sect. Eng. Div.



ROMA 20 Oct. 1944

LT. ED WADE-BROWN
Chief of E. & M. Sect. Eng. Div.

Pep/TUL.

LINEE IN ESERCIZIO

Linea	Itinerario
C.E.D.	P.za Risorgimento - P.Maggiore - B.ta S.Paolo - P.te Vitt.Emanuele
C.E.S.	P.te Vitt.Emanuele - P.ta S.Paolo - P.Maggiore - P.za Risorgimento
C.D.	P.le Flaminio - S.M.Maggiore - Colosseo - Monte Savello
C.S.	Monte Savello - Colosseo - S.M.Maggiore - P.le Flaminio
1 barr.	P.le Flaminio - Anello Parioli
3 barr.	Ministero Finanze - Via Bertoloni
4	Ministero Finanze - Via Eleonora Duse
5/c	Piazza Porta Pia - Piazza Istria
7	P.za Indipendenza - Largo XII Aprile
11	Piazza Vittorio Emanuele - Portonaccio
12	Piazza Vittorio Emanuele - Acqua Bullicante
16	Piazza Esquilino - Stazione Tuscolana
17	Piazza Vittorio Emanuele - Via Mondovì
20	Piazza Vittorio Emanuele - Porta Latina
22	Porta S. Paolo - Garbatella
23	Porta S. Paolo - Basilica S. Paolo
28	Monte Savello - Monteverde Nuovo
32/c	Piazza Cinquecento - Piazza Risorgimento
35	Piazza Risorgimento - Ospedale S.Maria della Pietà
37	Piazza Cavour - Piazza Sainsizza
105	Piazza Fiume - Piazza Acilia
107	Piazza Porta Pia - Monte Sacro
129	Piazza Sonnino - Monteverde
134	Ponte Vittorio Emanuele - Bivio Via Boccea
106	Piazza Fiume - Piazza S. Silvestro
115	S.M.Maggiore - Largo Chigi

C.E.S. :P.te Vitt.Emanuele - P.ta S.Paolo - P.Maggiore - P.za Risorgimento
 C.D. :P.le Flaminio - S.M.Maggiore - Colosseo - Monte Savello
 C.S. :Monte Savello - Colosseo - S.M.Maggiore - P.le Flaminio
 1 barr. :P.le Flaminio - Anello Parioli
 3 barr. :Ministero Finanze - Via Bertoloni
 4 :Ministero Finanze - Via Eleonora Duse
 6/9 :Piazza Porta Pia - Piazza Istria
 7 :P.za Indipendenza - Largo XXI Aprile
 11 :Piazza Vittorio Emanuele - Fortonaccio
 12 :Piazza Vittorio Emanuele - Acqua Bullicante
 16 :Piazza Esquilino - Stazione Tuscolana
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 :
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 107 :Piazza Porta Pia - Monte Sacro
 129 :Piazza Sonnino - Monteverde
 134 :Ponte Vittorio Emanuele - Bivio Via Boccea
 :
 106 :Piazza Fiume - Piazza S. Silvestro
 115 :S.M.Maggiore - Largo Chigi

Roma, 28 Ottobre 1944

3513

2

new file

TENSIONI DI LINEA

per la Roma-Lido	1500 Volt
per la Roma-Fiuggi-Alatri	1650 Volt
per la rete dei Castelli Romani	750 Volt

POTENZE ACCORDATE ATTUALMENTE

alla Roma-Lido	kw 800	150	ACEA
alla Roma-Fiuggi-Alatri	kw 1600	720	ACEA
alla rete dei Castelli Romani	kw 995	1350	(ripartiti tra le sottostazioni di Roma, Cecafuso e Villa Dismati).

31 OTT. 1944

*(1) una sottostazione a Ponticella e
un'altra a S. Cesare*

per la Roma-Lido 1500 Volt

per la Roma-Fiuggi-Alatri 1650 Volt

per la rete dei Castelli Romani 750 Volt

POTENZE ACCORDATE ATTUALMENTE

alla Roma-Lido Kw 8000 kw. kV 150 A.C.E.A.

(1) alla Roma-Fiuggi-Alatri Kw 1600 kw. " 720 A.C.E.A.

alla rete dei Castelli Romani Kw 995 kw. " 1350 (ripartiti tra

le sottostazioni di Roma, Genzano e Villa
Roma 2100 Kw 5250 Dm 1235

Domet).

31 OTT. 1944

(1) una sottostazione a Centocelle e
un'altra a S. Cesare

3512

SOC. PER AZIONI DELLE TRAMVIE
E FERROVIE ELETTRICHE DI ROMA
STEFER.

POSTO N.

MOVIMENTO ATTUALE DEI TRENI SUI SERVIZI GESTITI DALLA SOCIETA'

STEFER S.p.A. - VIA MONTENAPOLEONE, 155 - 00187 ROMA

FERROVIA ROMA-LIDO

2 coppie giornaliere (4 treni) sulla tratta Roma-Macchia

° °

FERROVIA ROMA-FIUGGI-ALATRI

media 60.000 viaggiatori al giorno - Servizio urbano Roma-Centocelle-Grotte Celoni :
ininterrottamente dalle ore 6 alle 10 e dalle 12,35 alle 18,25
con frequenza ogni 5 minuti;

b) - Servizio ferroviario (limitato alla tratta Roma-F. De
creeo) :

4 coppie giornaliere di treni viaggiatori (8 treni)
1 coppia bisettimanale (2 treni) merci.

° °

RETE DEI CASTELLI ROMANI

media 100.000 viaggiatori al giorno - Servizio urbano : Roma-Cinecittà e Roma-Statuario :
ininterrottamente dalle 6 alle ore 17,30 con frequenza ogni
tre minuti. *in alcune frequenze*

b) - Servizio tramviario extraurbano Roma-Grottaferrata
con diramazioni per Frascati e Marino :

14 coppie giornaliere (28 treni).

FERROVIA ROMA-LIDO

2 coppie giornaliere (4 treni) sulla tratta Roma-Lido

° ° °

FERROVIA ROMA-FLUGEL-ALATRI

unità 60.000 (semplice al giorno) - Servizio urbano Roma-Centocelle-Grotte Celoni :
ininterrottamente delle ore 6 alle 10 e delle 12,35 alle 18,25
con frequenza ogni 5 minuti;

b) - Servizio ferroviario (limitato alla tratta Roma-A. De-
caree) :

4 coppie giornaliere di treni viaggiatori (8 treni)
1 coppia bisettimanale (2 treni) merci.

° ° °

RETE DEI CASTELLI ROMANI

unità 100.000 (semplice al giorno) - Servizio urbano : Roma-Cinecittà e Roma-Statuario :
ininterrottamente dalle 6 alle ore 17,30 con frequenza ogni
tre minuti. *in alcune giornate*

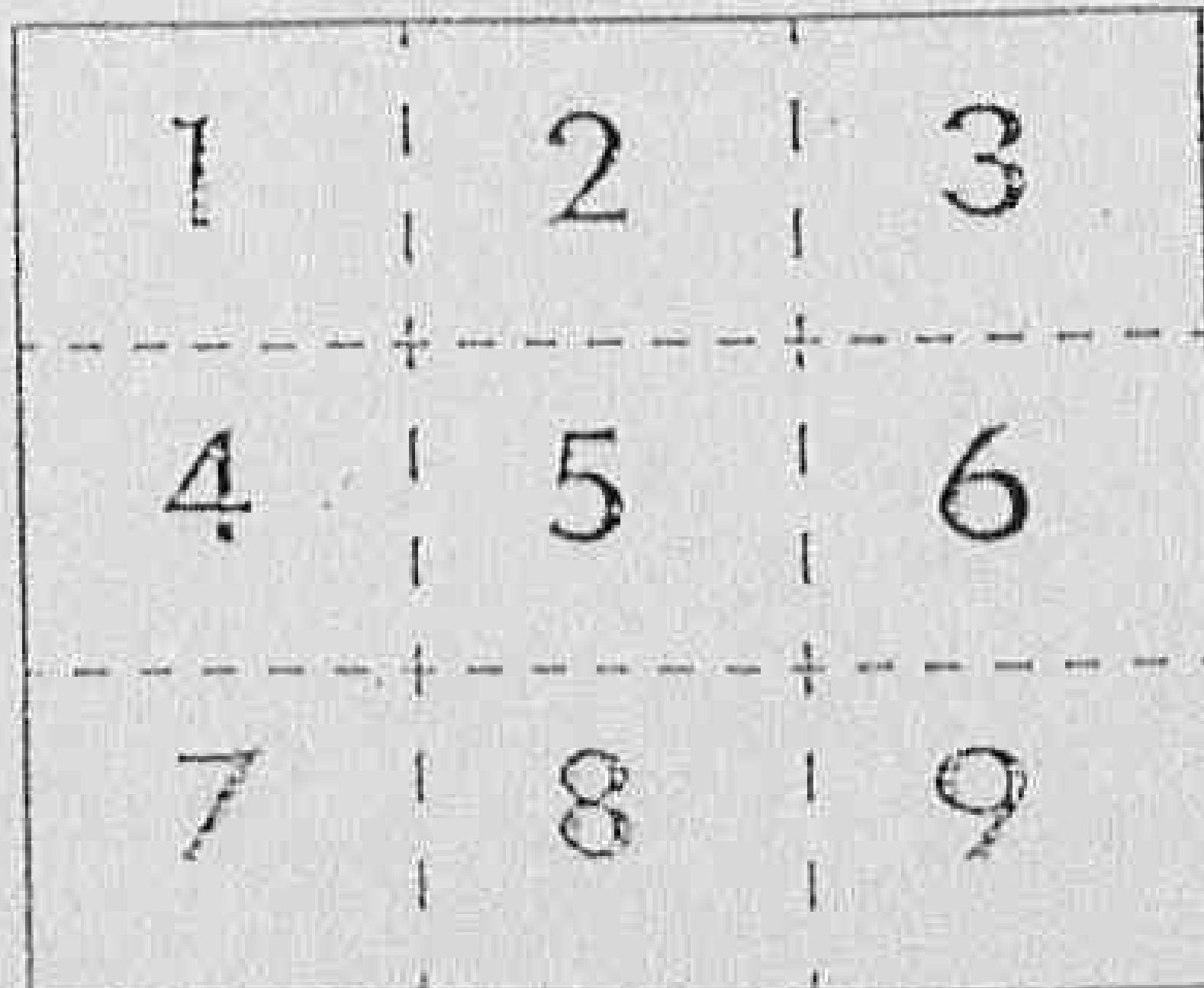
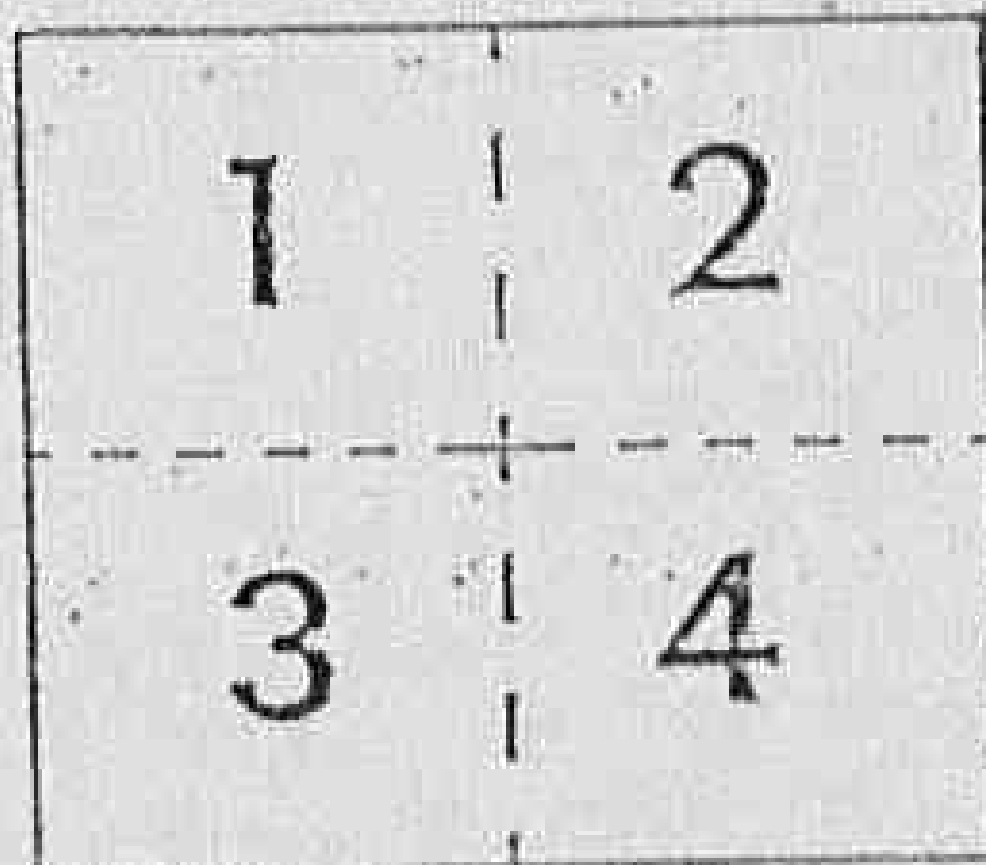
b) - Servizio tramviario extraurbano Roma-Grottaferrata
con diramazioni per Frascati e Marino :
14 coppie giornaliere (28 treni)).

3511

Roma, 31 Ottobre 1944

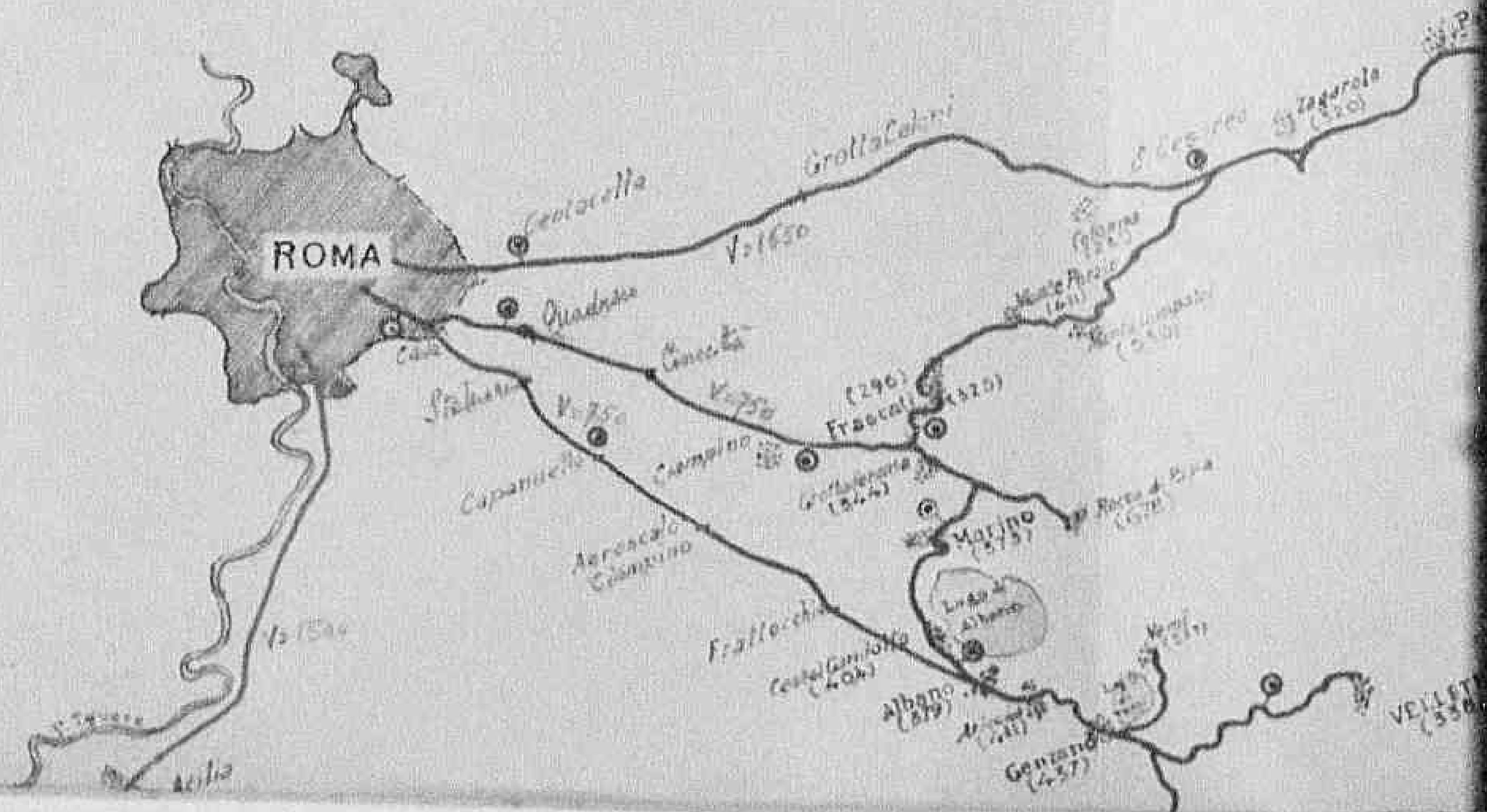
MAPS AND CHARTS TOO LARGE TO FILM
ON ONE EXPOSURE ARE FILMED CLOCKWISE
BEGINNING IN THE UPPER LEFT CORNER,
LEFT TO RIGHT, AND TOP TO BOTTOM.

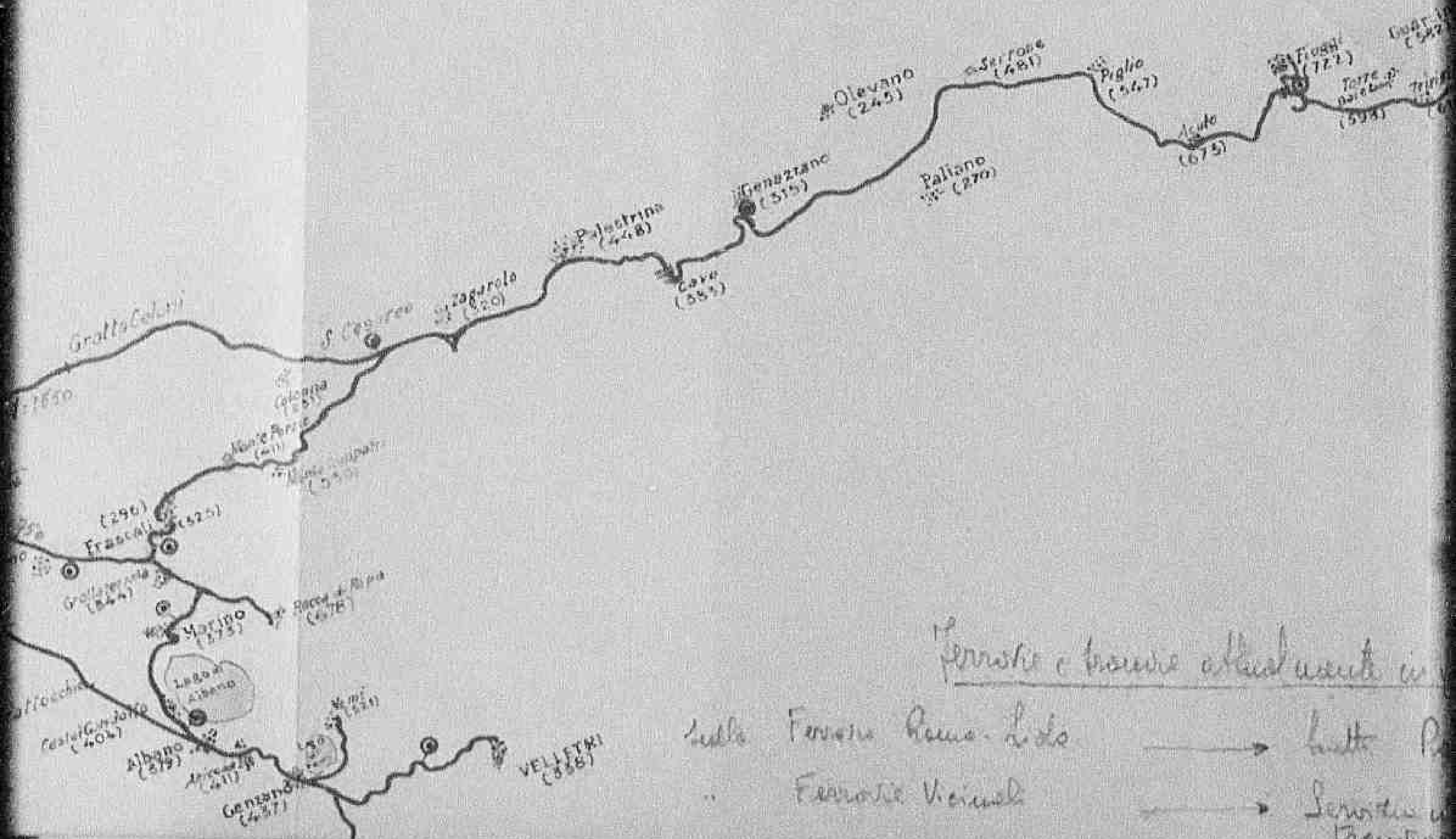
SEE DIAGRAMS BELOW.



Dis. N.° 137

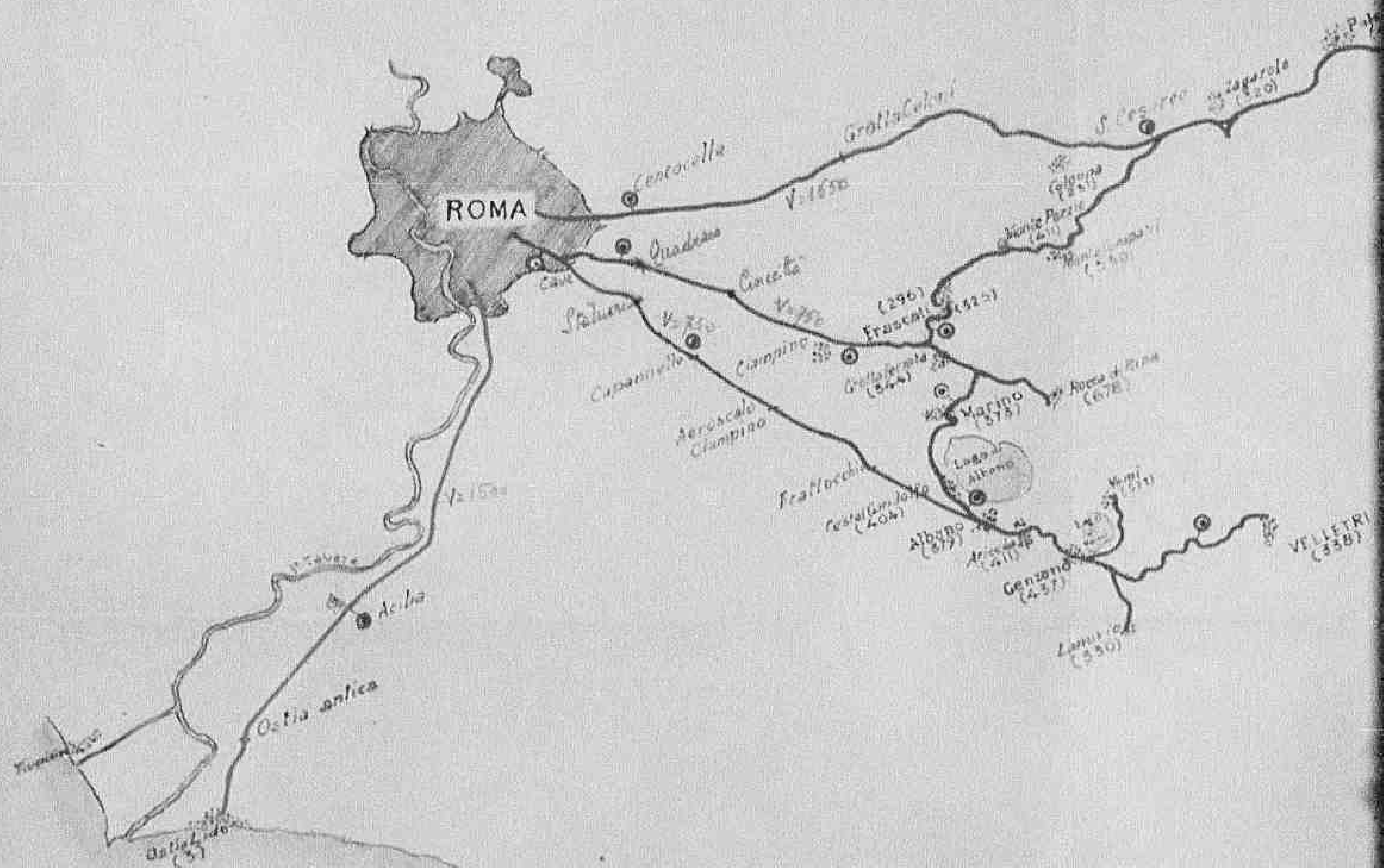
- Ferrovie Roma-Lido
- Ferrovie Vicinali
- Tramvie dei Castelli Romani
- Sottostazioni elettriche





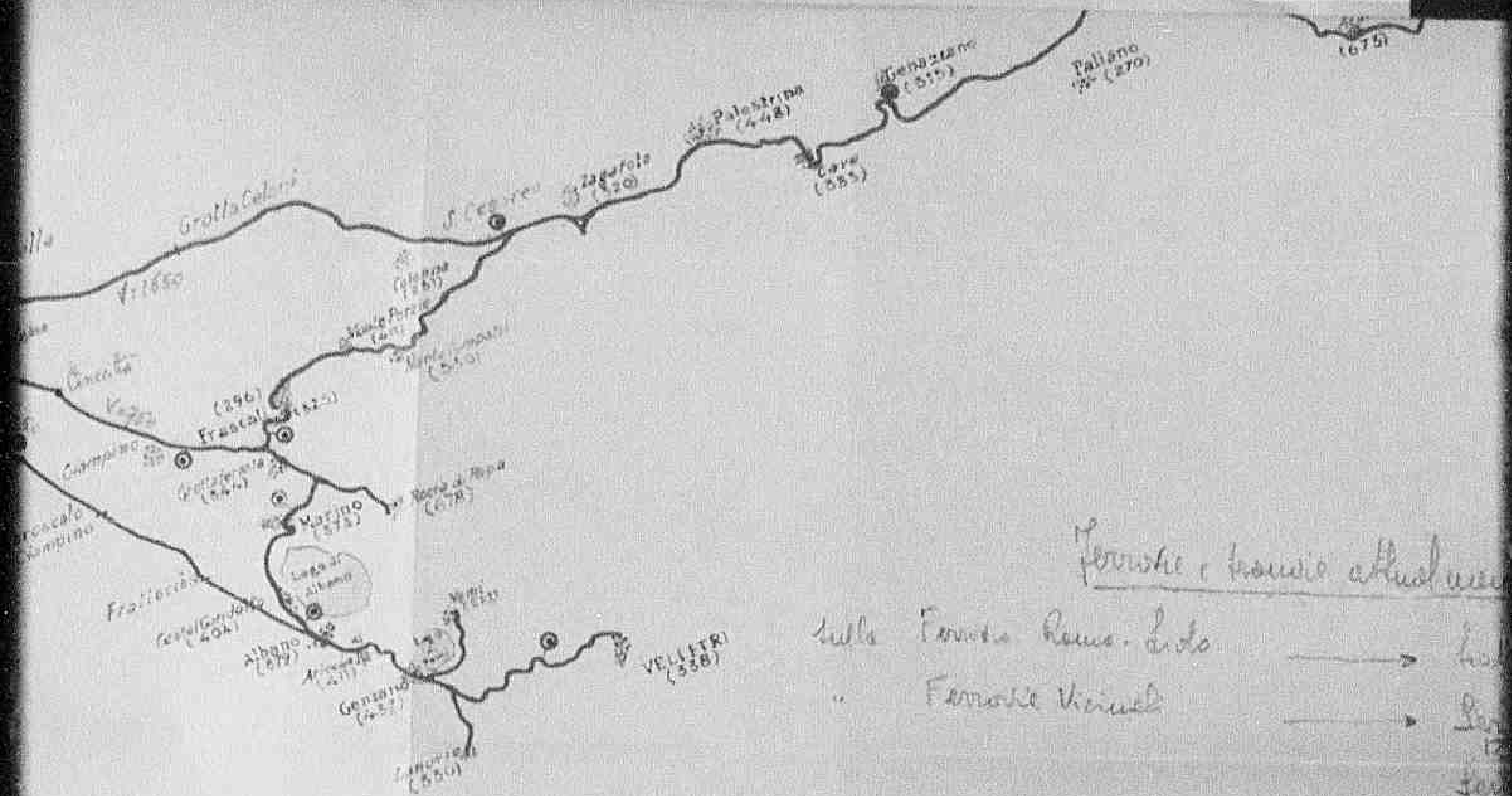
Pericolo e truppe alleate usate in

Sulla Fossa Roma-Lido → *Sulla R.*
Feonote Vicinchi → *Servizio di*
Trasporti



21321

Declassified E.O. 12356 Section 3.3/NND No. 785019



Frontiere e confini attuali
 sulla Frontiera Roma-Lido
 " Frontiera Venezia
 " Frontiera Corfù Roma

Scala 1:200000

Dallano
(270)

(675)

Alairi
(234)

PEROSINONE
(274)

Perrosine e prairie alluviali in funzione.

Perrosine - Lido

Perrosine - Vignola

Perrosine - Corbelli - Perrosine

Perrosine - Lido - Perrosine - Lido
Km 16

Perrosine - Vignola - Perrosine - Vignola
Km 16

Perrosine - Lido - Perrosine - Lido
Km 26

Perrosine - Corbelli - Perrosine - Corbelli
Km 3.500

Perrosine - Lido - Perrosine - Lido
Km 16

Perrosine - Vignola - Perrosine - Vignola
Km 5

SCALA 1:200000

REPORT ON TRAFFIC IN ROME AREA

The electric traction of goods and passengers in the city of Rome and its surroundings is performed by three Companies:

- 1) AZIENDA TRAMVIE ED AUTOBUS DEL COMUNE DI ROMA (A.T.A.B.) which administers the trams and trolleybus lines in Rome City.
- 2) SOCIETA' TRAM E FERROVIE ELETTRICHE DI ROMA (S.T.E.F.E.R.) which administers:
 - a) CASTELLI ROMANI tram lines
 - b) ROMA-OSTIA A MARE electric railway
 - c) FERROVIE VICINALI (Rome-Tiuggi)
- 3) FERROVIA ROMA NORD which administers the ROMA-VITERBO line.

The first two companies depend from the Municipality of Rome, owner and financial organ; the 3rd is a private Coy.

On account of the continual spreading of the city and continual increase of its population, all the neighbouring villages, in previous time favoured by the locomotive means, at that time abundant and increasing, had becoming a regular dwelling for a great number of roman citizens, who had transferred their families there and convey to Rome daily to perform their duties. Thus it was a great number of workmen and employees who used to come to Rome every morning and go back every evening. The villages surrounding Rome and in communication with Rome through the above companies were an integral part of Rome city with which continual relations were essential.

In former times all the neighbouring of Rome were chosen for holiday trips. On Sunday and other festivity traffic on those lines was greater than on working days; but due to the outbreak of the war this pleasure traffic has ceased completely and has been replaced by that of many workers, in order to avoid the danger of bombardments, have left

which administered the trams and trolleybus lines

in Rome City.

-2) SOCIETA TRAM E FERROVIE ELETTROTRAM DI ROMA (S.T.E.F.E.R.)

which administers:

- a) CASTELLI ROMANI tram lines
- b) ROMA-OSTIA & MARE electric railway
- c) FERROVIE VICINALI (Rome-Fiuggi)

-3) FERROVIA ROMA NORD which administers the ROMA-VITERBO line.

The first two companies depends from the Municipality of Rome, owner and financial organ; the 3rd is a private Coy.

On account of the continual spreading of the city and continual increase of its population, all the neighbouring villages, in previous time favoured by the locomotions means, at that time abundant and increasing, had becoming a regular dwelling for a great number of roman citizens, who had transferred their families there and convey to Rome daily to perform their duties. Thus it was a great number of workmen and employees who used to come to Rome every morning and go back every evening. The villages surrounding Rome and in communication with Rome through the above companies were an integral part of Rome city with which continual relations were essential.

In prewar times all the neighbouring of Rome were chosen for holiday trips. On Sunday and other festivities traffic on those lines was greater than on working days; but as the outbreak of the war this pleasure traffic has ceased completely and has been replaced by that of many Romans, who in order to avoid the danger of bombardments, have left the city. Since then the congestion of the traffic and the danger of the

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journeys have counselled the travellers to move only for absolute necessities. It is to be excluded that pleasure traffic still exist. All journeys are undertaken only for essential reasons.

POWER INSTALLED

The three companies charged of the traction had installed in Rome and its surroundings some converter stations for about 70.000 KW, and exactly:

A.T.A.G.	KW. 45.000
S.T.E.P.E.R.	" 15.500
ROMA-FORD	" 6.400
A.T.A.B.	KW. 20.000
S.T.E.P.E.R.	" 6.600
ROMA FORD	" 2.200

In prewar time the maximum peak demand for the three companies were:

The medium daily consumption of energy was of about 300.000 KWH.

Presuming that the traffic is proportional to the consumption, the following tabulation can show what is the reduction of the traffic compared with the pre-war.

COMPANY	Medium daily consumption, (Pre-war)	Actual daily consumption	% of Consumption and theref. Traffic
A.T.A.G.	KWH. 230.000	KWH. 50.000	21%
S.T.E.P.E.R.	" 62.000	" 11.000	17,5%
ROMA FORD	" 15.000	" 3.500	23%

In the next leaf are tabulated all the substations of the three Coy.

WORKMEN - The three coys being the traffic reduced by 80% still have at the dependence nearly all the prewar personnel, wich they continue paying even not using it. S.T.E.P.E.R. has 1500 workmen and has found work for 500 men in repair works and survey of plants. The ROMA-FORD is in the same conditions. Instead the A.T.A.G., not having other possibilities has increased the travelling staff having two or three controllers for each vehicle and

and its surroundings some converter stations for about 70,000 KW, and exactly:

A.T.A.G.	KV. 45,000
S.T.E.P.E.R.	" 15,500
ROMA-WORD	" 5,400
A.T.A.G.	KV. 20,000
S.T.E.P.E.R.	" 5,600
ROMA-WORD	" 2,200

In pre-war time the maximum peak demand for the three companies were:

The medium daily consumption of energy was of about 190,000 KWH.

Presuming that the traffic is proportional to the consumption, the following tabulation can show what is the reduction of the traffic compared with the pre-war.

COMPANY	Medium daily consumption. (pre-war)	Actual daily consumption	% of consumption and theref. Traffic
A.T.A.G.	KWH. 230,000	KWH. 50,000	21%
S.T.E.P.E.R.	" 62,000	" 11,000	17.5%
ROMA-WORD	" 15,000	" 3,500	23%

In the next leaf are tabulated all the substations of the three Coy.

NOTE - The three coys being the traffic reduced by 80% still have at the dependence nearly all the pre-war personnel, which they continue paying even not using it. S.T.E.P.E.R. has 1500 workmen and has found work for 500 men in repair works and survey of plants. The ROMA-WORD is in the same condition. Instead the A.T.A.G., not having other possibilities has increased the travelling staff, having two or three controllers for each vehicle and has shortened the time periods. But just the same, hundreds of its workmen are paid every day and cannot be employed in any way. On 4580 workmen about 2000 are daily unoccupied or scarcely occupied.

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STATIONS INSTALLED SUPPLYING ACTUAL CONDITION
POWER POWER COY
KW.

A.T.A.G.

VIA BACCINA	3.250		
VIA VOLTURNO	4.100		
S. GIOVANNI	4.900	All Station	
ROMA-ROSSI	3.000	are connect.	
SAN PAOLO	4.100	by a cable at	
ROMENTANA	4.960	8.200 v and	
VIA PARIGLI	3.020	can be	All Operating
PIAZZA D'ARMI	4.800	supplied	
SAN PIETRO	3.200	either by	
TRASTEVERE	3.000	S.R.E. or	
ETIOPIA	3.000	A.T.A.G.	
VIA MILANO	1.800		
BOLLEA	1.000		
AMPULANTE (portable)	1.000		
PRESTINO	350		

TRAMVIA CASALI

ROMA	1.000	S.R.E.	Operating
CICAPONO	1.000	A.G.E.A.	Operating
CIAMPINO	1.300	S.R.E.	
S. GIUSEPPE	1.050	"	
ALBANO	750	"	
ACQUA LUCIA	1.125	"	
FRATTOCCHIE	740	"	
V. DUMET	700	"	Operating
CAPANESE	300	"	

ROMA-FIUGGI

CENTOCALLE	3.450	A.G.E.A.	Operating
SAN CESAREO	550	S.R.E.	
GENNAZZANO	750	"	
FIUGGI	800	"	

ROMA-OSTIA

ACILIA	400	A.G.E.A.	
ROMA-VITERBO			
AEROPORTO	2.400	S.R.E.	Operating
CIVIT CASTELLANA	2.400	"	"
VITERBANO	1.600	"	"

ROMA-VITERBO

<u>A.T.A.O.</u>			
VIA MADONNA	3.250	All Station	All Operating
VIA VOLUNTERO	4.100	are connect.	
S. GIOVANNI	4.900	by a cable at	
ROMAGNOLI	3.000	8.200 V and	
SAN PAOLO	4.100	can be	
ROMENTANA	4.960	supplied	
VIA FANTICLI	3.020	either by	
PIAZZA D'ARMI	4.900	S.R.3 or	
SAN PIETRO	3.200	A.T.A.O.	
TRASTEVERE	3.000		
STIPIA	3.000		
VIA MILANO	1.800		
BOCCIA	1.000		
AMBULANTE (Portable)	1.000		
TRASTEVERE	350		
<u>TRAMVIA CASTELLI</u>			
ROMA	1.000	S.R.3.	Operating
CASAPINO	1.000	A.G.E.A.	Operating
GIAMPINO	1.300	S.R.3.	
S. GIUSEPPE	1.050	"	
ALBANO	750	"	
ACQUA LUCIA	1.125	"	
FRATELLI	740	"	
V. EMERSE	700	"	Operating
CAPARENZIE	300	"	
<u>ROMA-FIUGGI</u>			
CETROCELLI	3.450	A.G.E.A.	Operating
SAN GIOVANNI	850	S.R.3.	
OSWALDZANO	750	"	
FIUGGI	800	"	
<u>ROMA-OSTIA</u>			
OSTIA	400	A.G.E.A.	
<u>ROMA-VITERBO</u>			
ARROPORTO	2.400	S.R.3.	Operating
OSTIA CASTELLANA	2.400	"	"
VITERBANO	1.600	"	"

MOVABLE MATERIAL

From the following draft we can see that the three societies have 550 Units in the way of locomotives, goods wagons, passenger cars

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	AVAILABLE			UTILISED			NOT UTILISED		
	LC	GH	PG	LC	GH	PG	LC	GH	PG
A.T.A.G.	420	--	99	143	--	36	272	--	63
ROMA-NORD	11	150	13	4	50	--	7	90	18
S.T.E.P.E.R.	91	160	98	43	9	36	48	159	62

(LC=Locomotors ; GH= Goods wagons ; PG= Passenger cars)

which, even being efficient, cannot be put in operation on account of deficiency of energy.

POPULATIONS WITH AVAILABLE TRAM SERVICES OF THE SERVICE OF THE TRAMWAYS

	A.T.A.G.	2,000,000	inhabitants
S.T.E.P.E.R.	200,000	--	(Roma-Finaggi)
"	100,000	--	(Castelli Romani)
"	50,000	--	(Roma-Castia)
ROMA-NORD	110,000	--	(Roma-Viterbo)

On above data, the situation of each single city has been examined considering which would be a minimum program of improvements to bring to their services. Follow the examination of each Society.:

A. I. A. G.

The contraction in the tram services, which we have seen including on contraction at the rate of about 30%, according to the City, is of the order of 80%. In fact, while in last month of September 44 were performed only 140,000 km-wagon (Tram and trolleybuses), in June 1941 the figure was of 5,110,000 km.

Not considering the enormous inconvenience caused to the pe-

A.T.A.U.	420	99	148	36	272	63
ROMA-NORD	11	150	18	4	60	18
S.T.S.P.S.R.	91	168	98	43	9	36
					48	159
						62

(LC=Locomotors ; GV= Goods Wagons ; PC= Passenger cars)

which, even being efficient, cannot be put in operation on account of deficiency of energy.

POPULATION WHICH AVAILS ITSELF OF THE SERVICES OF THE THREE COYS.

A.T.A.G.	2.000.000	inhabitants	
S.T.S.P.S.R.	200.000		(Roma-Fiuggi)
"	100.000		(Castelli Romani)
"	50.000		(Roma-Castia)
ROMA-NORD	110.000		(Roma-Vitorbo)

On above data, the situation of each single Coy has been examined considering which would be a minimum program of improvements to bring to their services. Follow the examination of each Society.:

A. T. A. G.

The contraction in the tram services, which we have seen incident on contraction at the rate of about 80%, according to the Coy, is of the order of 86%. In fact, while in last month of September 44 were performed only 140.000 km-waggon (Tram and trolleybuses), in June 1941 the figure was of 5.110.000 Km.

Not considering the enormous inconvenience caused to the population which has to walk long distances, situation made worse by bad season, insufficient feeding, lack of shoes, disappearance of all other means of locomotion, the contraction produces congestion in vehicles

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with travel packed and with people hanging out.

The capacity of vehicles which is of about 70 persons for the 2 beam waggons and of 90 for the 3 beam ones, is carried to such extreme limits that makes the safety of the service doubtful; this happens every hour of the day and we can confirm that the crowding is always of 200% over the maximum foreseen for every vehicle, above all in the peak hours in the morning and late hours of the evening. The recent suspension of the "CIRCOLARE INTERNA" has had as consequence the overcharge of the "CIRCOLARE ESTERNA" lines.

An increase of the service in its volume and its time-table is absolutely necessary and urgent for the population. An improvement on the service that should make the best possible use of load diagrams has been examined, allowing the transport of a larger number of people and the connection of parts of the town which are actually lacking of every service.

A decongestion of vehicles is not to be hoped even then, as the possible traffic will be 1/3 of normal pre-war traffic, when, it is known, 120% would be needed at present. But the population could secure good advantage from these improvements.

As from enclosure, an increase of about 20% of vehicles travelling on "CIRCOLARE ESTERNA" and extending time-table to 21 P.M. are foreseen. As for extension of time-table, considered also for the other services, it must be considered as a necessity to follow only on an average program, as the relations regulator understand the difficulty of making the peak hours coincide with the requests of the traction.

The activation of various side lines has been considered, with extension of the time table and a slight increase (20%) of central lines, and "CIRCOLARE INTERNA" during the morning.

The reinstitution of goods transport service from the general market to the smaller area markets has been taken into consideration. This service has been of great utility to the population and requires about 1000 KWH in the first hours of the morning and midday with peak load of 250 KWH. The total result the consumption should be increased from the present 6 to 6,500 KWH from 6 to

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The reinstitution of goods transport service from the general market to the smaller areas markets has been taken into consideration. This service has been of great utility to the population and requires about 1000 KWH in the first hours of the morning and midday with peak load of 250 KW.

As total result the consumption should be increased from the present daily 50.000 KWH to about 83.000 KWH with peak loads of 6.500 KW from 6 to 9 A.M. and a constant load in the rest of the day of 5.000 KW.

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This programme could be reduced to 10,000 KWH, should not the extension of the time table be possible.

The enclosed graphic shows which is the actual consumption of every service and the diagramme of total load for every perfectioned service and all services together. (See enclosure N.4)

BETTER UTILISATION OF THE ELECTRIC LOAD

In considering the difficulties that are against the realisation of even such a simple programme, Ing. Barleri has proposed to the A.F.A.G. to order to its conductors, providing to block accordingly all control apparatus, to drive continually "IN SERIES". The technicians of the A.F.A.G. are studying the possibility of such a measure which reduces peaks of 50% and therefore in theory, should allow to place in circulation a double number of locomotors with the same power.

This measure would reduce the speed, but would not effect the whole length of runs, as great part of its lasting depends on stoppings. According to technicians of A.F.A.G. a total reduction of commercial speed of 50% would result. This would not be excessively heavy if we think that every run lasts on the average 30 minutes and that stops made by travellers waiting for the tram would be considerably reduced.

The Coy is of the opinion that on some radial lines, which are plain, these measures would be good: not so for the "CIRCULAR" lines which have to cross many dielevels and that would have to make ascents at impossible low speeds.

The Coy is going to make experiments at full charge, experiments which will be made in presence of the Chief of Electr. & Mech. Sect.

Naturally all the difficulties which are feared would be eliminated if the Power Coys could insure the rigorous continuance of the tension on lines at 8,000 Volts, which generally have oscillations of 12% or 15% less

Awaiting for the final results of the experiments we are of opinion that the company should at least give these instructions to its com-

all services together. (See enclosure N.4)

BETTER UTILISATION OF THE ELECTRIC LOAD

In considering the difficulties that are against the realisation of even such a simple programme, Ing. Ranieri has proposed to the A.T.A.G. to order to its conductors, providing to block accordingly all control apparatus, to drive continually "IN SERIES". The technicians of the A.T.A.G. are studying the possibility of such a measure which reduces peaks of 50% and therefore in theory, should allow to place in circulation a double number of locomotor with the same power.

This measure would reduce the speed, but would not affect the whole length of runs, as great part of its lasting depends on stoppings. According to technicians of A.T.A.G. a total reduction of commercial speed of 50% would result. This would not be excessively heavy if we think that every run lasts on the average 30 minutes and that stops made by travellers waiting for the tram would be considerably reduced.

The Coy is of the opinion that on some radial lines, which are plain, these measures would be good: not so for the "CIRCOLARI" lines which have to cross many dislevels and that would have to make ascents at impossible low speeds.

The Coy is going to make experiments at full charge, experiments which will be made in presence of the Chief of Electr. & Mech. Sect.

Naturally all the difficulties which are feared would be eliminated if the Power Coys could insure the rigorous continuance of the tension on lines at 8,200 Volts, which generally have oscillations of 12% or 15% less.

Awaiting for the final results of the experiments we are of opinion that the company should at least give these instructions to its conductors:

- I) To use the "series" every time possible, even if the speed becomes too slow.

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- 2) In the slopes, exploit at the maximum the gravity force, avoiding to employ electric energy on the starting or at least using the minimum possible.
- 3) Disconnect the current a good deal of meters before the arrive or stopping places, utilising the gathered force of the car.
- 4) Avoid the absorption of current every time that the traffic conditions lets foresee the necessity of stopping or relax.
- 5) Avoid to hold connected the resistances more than necessary.

FERROVIA ROMA-NORD

This railway connects Viterbo and Civitavecchia to Rome. Its length is of about 100 Km. and it extends in a region neighbouring Rome, which is the richest of agricultural products and has a population of about 110.000 inhabitants.

The railway is used by a great number of people that travel not for pleasure trips, but to transport to Rome food for family uses.

Four trains run at the same time on the line, but defusing the starts it is possible to remain in the maximum charge of 600 Kw as allotted. Each train is composed by a locomotive which absorbs a maximum of 500 Kw at the start and has 6 goods-wagons for the passengers. When it is necessary a goods-train, wagons with travels during periods when the other 4 trains absorb less, are set up. In present conditions the train takes about two days to perform the going journey. Presently 600 Kw have been assigned to the railway from 12 P.M. to 6 P.M. but the situation is very difficult as on a car were only peoples are meant to travel, more than 80 peoples get it with all their luggages, making a dreadful confusion. The stays in the stations are too shorts and accidents are feared.

The anticipation of the time of distribution of energy to 20 P.M. is proposed: thus the stops in stations could be lengthened and the

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The railway is used by a great number of people that travel not for pleasure trips, but to transport to Rome food for family uses.

Four trains run at the same time on the line, but during the starts it is possible to remain in the maximum charge of 600 Kw as allotted. Each train is composed by a locomotor which absorbs a maximum of 500 Kw at the start and has 6 Goods-waggons for the passengers. When it is necessary a Goods-train, waggons with travels during periods when the other 4 trains absorb less, are set up. In present conditions the train takes about two days to perform the going journey. Presently 600 Kw have been assigned to the railway from 12 P.M. to 6 A.M. but the situation is very difficult as on a car were only peoples are meant to travel, more than 80 peoples get it with all their luggages, making a dreadful confusion. The stays in the stations are too shorts and accidents are feared.

The anticipation of the time of distribution of energy to 20 P.M. is proposed: thus the stops in stations could be lengthened and the goods train would have the possibility of performing the ¹³⁵⁰³ in one day. The stops in Civitavecchia could be abolished, and another couple of trains, which should travel only between Rome and Civitavecchia

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lans could be set up between 22hs and 5 A.M.

Load should be in this case of 600 KX between 22 P.M. and 24 P.M. and at least 800 KX between 24 PM and 6 A.M.

DRAFT OF IMPROVEMENTS ACCORDING TO TIME TABLE:

Transportations	Septemb. 1944	8 HOURS SERVICE	12 Hours service
MONTHLY IN 1943			
PASSENG. GOODS TONS	PASS. GOODS	PASSENG. GOODS	PASSENG. GOODS
31.000 1.500	50.000 150	65.000 300	100.000 700

S.T.R.P. 2.2.

1) RAILROAD ROMA-PIUGGI

This railroad crosses a fertile and populous area in which 200.000 inhabitants are interested. Presently the service is performed only between ROMA and SAN CESAREO with only one train which leaves Rome in the morning and returns from S. Cesareo in the evening, absorbing 720 KW and 1680 KWH.

Within one month the repair works will permit to put in operation the stretch S. CESAREO-PALESTINA (KM. 11) covering the important areas of ZABRONE and PALESTINA. Already in peace-time the railway used to transport from this area 77 tons of agricultural products daily and it is to be considered that this traffic lacking of other means, could be triplicated.

To perform this programme it is necessary to put in tension the substation of S. Cesareo with 200 KW. It is premature to speak for the present of other probable developments of this service which should in a short time reach Piuggi.

2) TRAMVIA C. STALLI ROMANI

Within one month the S.T.R.P. 2.2. could be in condition of putting in operation the branches of line:

VARISCO-ALBANO..... KM. 7,2

VALLE VIOGNA-VALLE VERGINE 3,6

PINIGOLARE BECCA DI PAPA (Meters 96 of distance) 3502

DEPT OF IMPROVEMENTS ACCORDING TO TIME TABLE:

Transportations monthly in 1943	Septemb. 1944	8 HOURS SERVICE	12 HOURS service
PASSENG. GOODS TONS	PASS. GOODS	PASSENG. GOODS	PASSENG. GOODS
31,000 1,500	50,000 150	65,000 300	100,000 700

M.Y. 2.7.4.5.1) RAILROAD ROMA-FIUGGI

This railroad crosses a fertile and populous area in which 200,000 inhabitants are interested. Presently the service is performed only between ROMA and SAN CESAREO with only one train which leaves ROMA in the morning and returns from S. Cesareo in the evening, absorbing 730 KM and 1680 KWH.

Within one month the repair works will permit to put in operation the stretch N. CESSANO-PALMISTINA (N. 11) covering the important areas of ZANAROLO and PALMISTINA. Already in possession the railway used to transport from this area 77 tons of agricultural products daily and it is to be considered that this traffic lacking of other means, could be triplified.

To perform this programme it is necessary to put in tension the substation of S. Cesareo with 200 KV. It is premature to speak for the present of other probable developments of this service which should in a short time reach Fiuggi.

2) TRAMVIA CASTELLI ROMANI

Within one month the S.T.S.F. E.N. could be in condition of putting in operation the branches of line:

MARINO-ALBANO..... KM. 7,2

VALLE VIOLETTA-VALLE VERGINE 3,6

MUSICOLARE BOCCA DI PAPA (Meters 95 of dislevel) **3502**

To perform this, the following cabins should be put in operation:

VILLA MURIEL..... KWH 150- KWH 1300-day

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S. GIUSEPPE..... KW 300-KWH I.300-Day
 with, this all the area of the Castelli Romani will be considered
 (100.000 inhabitants) as from Albano toward Velletri there are motor
 services which could be put in operation if the railway managed to serve
 Albano. (See enclosure N.7)

1) FERROVIA ROMA-OSTIA

The Company has already brought forward the necessity of connecting
 the part ROMA-ACILIA (Km 16- 25.000 inhabitants)

For this, KW400- 3.000 KWH a day are needed to supply the substation
 of ACILIA.

Including traffic of passengers on this railway, traffic of goods
 would be considerable. This traffic was of 38 tons daily in pre-war times.
 totally, for all the services of the S.T.E.F.E.R. an addition
 of 1.050 KW and daily 9000 KWH would be needed. The actual requirements
 are of ~~1.200~~ 1.200 KW peak and KWH 11.000 daily.

LIST OF ENCLOSURES:

- 1) S.T.E.F.E.R. Map of Rome with indication of pre-war lines, of trams, trolley-buses and autobuses.
- 2) A.T.A.G. Wagons circulating in pre-war during each hour of every day.
- 3) A.T.A.G. Locomotives " " " " " "
- 4) A.T.A.G. Monthly consumption of energy during the last 4 years.
- 5) A.T.A.G. Consumption of energy for each service or group of services-
 Actual situation and proposed situation.
- 6) A.T.A.G. Map of Rome with indication of the services which are proposed
 to be put in operation.
- 7) S.T.E.F.E.R. Map of the railroad Rome-Viterbo, with indication of the
 actual service and the proposed.
- 8) S.T.E.F.E.R. Map of the "Castelli Romani" lines.
- 9) S.T.E.F.E.R. Railroad, Rome-Viterbo, actual load and proposed load.
- 10) S.T.E.F.E.R. Actual load situation of the three lines, in totality, and
 proposed load.

2) FERROVIA ROMA-OSTIA

The Company has already brought forward the necessity of connecting the part ROME-ACILIA (Es 16- 25.000 inhabitants)

For this, KW400- 3.000 KWH a day are needed to supply the substation of ACILIA.

Including traffic of passengers on this railway, traffic of goods would be considerable. This traffic was of 38 Tons daily in pre-war times. Totally, for all the services of the S.T.E.F.E.R. an addition of 1.050 KW and daily 9000 KWH would be needed. The actual requirements are of ~~Es 666~~ 1.200 KW peak and KWH 11.000 daily.

LIST OF ENCLOSURES:

- 1) S.T.A.G. Map of Rome with indication of pre-war lines of trams, trolleys, busses and autobuses.
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- 3) A.T.A.G. Locomotors " " " " " "
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Actual situation and proposed situation.
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- 7) S.T.E.F.E.R. Map of the railroad Rome-Fiuggi, with indication of the actual service and the proposed.
- 8) S.T.E.F.E.R. Map of the "Castelli Romani" lines.
- 9) S.T.E.F.E.R. Railroad, Rome-Viterbo, actual load and proposed load.
- 10) S.T.E.F.E.R. Actual load situation of the three lines, in total, and new total proposed load.
- 11) ACTUAL LOAD OF THE THREE TRACTION COYS
- 12) PROPOSED LOAD " " " "

3501

Luc A. RAVIERA

Translation by: MY

TRAIN FOR A POWER VALLEY LOAD IN THE ELECTRIC MANS

Having been entrusted by the head of the M. & Mech. Section with the examination of the electric section in Home City and surrounding and to furnish recommendations for an increasing efficiency of system I proposed to try it if it were possible to compel the A.F.S.V. to run their trains always in "series" by a proper blocking up of the control board.

On September 17th, further to the agreements made with the Manager of the A.F.S.V. a train car of three axle normal type, 6 tons fixations load (similar to passenger loads during rush periods) was put at our disposal to carry out similar load trials. The presence of Lt. Wade Brown, the Foreman, the A.F.S.V. Commissioner, other Civil Engineers and experts besides the undersigned.

The above tests, on level ground as well as uphill (Monte Mario slope) gave the following results:

MEASUREMENTS OF SPEED: as always in "series" run caused a decrease of speed:

on level ground	35
uphill	30

From the plumb line calculation of the car and from statistical data secured from the Company it resulted that on an average uniform distance, stop time is 40 ft., running time is 60 ft. During the run, as a rule, the driver never uses of the series during half the time and of the parallel during the other half.

Consequently we may deem that if per each running time unit we employ only the series, the following drawbacks will result:

in a level run	0.078
in an uphill run	0.15
in steps	NIL

Therefore we find an average total increase in the running time of 223/1000

POWER INCREASE: The difference of power absorbed at starts, above all when passing from the "series" into the parallel have been noted as remarkable and depending on the accuracy of driver's control. It was anyhow experienced that starts made by series are absolutely safe a minimum of 25 ft. as a rule. The difference of power absorbed at starts, above all when passing from the "series" into the parallel have been noted as remarkable and depending on the accuracy of driver's control. It was anyhow experienced that starts made by series are absolutely safe a minimum of 25 ft. as a rule.

Having been activated by the Head of the XI. & Mech. Section with the examination of the electric section in New City and surrounding area is further recommendation for an increasing efficiency of systems I proposed to try if it were possible to compel the A.F.A.C. to run their trains always in "series" by a proper blocking up of the control board.

On September 17th, further to the agreements made with the Manager of the A.F.A.C. a train car of three exploded normal type, 6 tons fictitious load (similar to passenger loads during rush periods) was put at our disposal to carry out test which took place in the presence of Lt. Wade Brown, Maj. Vainelli, the A.F.A.C. Commissary, other Civil Engineers and Experts besides the undersigned.

The above tests, on level ground as well as uphill (Monte Mario slope) gave the following results:

DECREASE IN SPEED: as always in "series" run caused a decrease of speed:

on level ground	26 %
uphill	32 %

From the placard configuration of time and from statistical data secured from the Company it resulted that on an average unitarian distance, stop time is 40 %, running time is 60 %. During the run, as a rule, the driver makes use of the series during half the time and of the parallel during the other half.

Consequently we may deem that if per each running time unit we employ only the series, the following drawbacks will result:

in a level run	0.078
in an uphill run	0.15
in stops	NIL

Therefore we find an average total increase in the running time of 220/1000

POWER ABSORPTION: The differences of power absorbed at starts, above all when passing from the "series" into the "parallel" have been noticed as remarkable and depending on the accuracy of drivers control. It was anyhow experienced that starts made by series cause absorptions from a minimum of 55 KW to a maximum of 100 KW.

Passings from series to parallel however have shown absorptions reaching 120 KW.

3500

389

It would prove very significant to examine in what proportions absorptions at starts affect the average load diagram for each car and particularly on the diagram of total absorption for many cars running concurrently. As I have not the necessary data I deem such information as negligible but on the contrary it may prove important. The power absorbed during the run by series on a preestablished distance has turned out 43% the power absorbed for the same distance in a car in parallel (start in series).

From data secured from the A.T.A. we know that for each unit of average distance, cars run, as a rule, 20% of the time in series and for the rest of the time in parallel. Consequently on 0.8 time unit usually employed in parallel, we should find out the above mentioned decrease of power absorbed at the rate of 43%, by carrying the average of the power absorbed, during a distance covered wholly by series, to 54% of the power absorbed during the same run by alternating series and parallel.

POWER CONSUMPTION: From experiments on uphill running we ascertain that the same distance is covered wholly in series instead of in parallel saves 33% power.

CONCLUSIONS

Such tests as above are still insufficient to reach a conclusion at this moment they are shown by the following figures:

<u>Advantage:</u> too much time employed in average distance . . .	43%
<u>Advantage over power employed . . .</u>	46%
<u>Advantage over power absorbed . . .</u>	33%

With such figures definitive, it could be possible to abuse the highest power at present allotted to trams of 46% with also the same number of people carried (even at a lower speed). Otherwise we might leave the present power allotment and establish the service of an almost double number of cars with consequent transportation of double the number of people. The A.T.A. has in service at present from 120 to 200 cars (line limit is due to the insufficient loads imposed by us) and have at their disposal several hundreds more besides unemployed personnel.

They carry about 500/550.000 people per day. They might carry double that figure by using just the same power maximum established and spare about 15.000 kWh power.

Such optimistic data should, however, be checked with more

information as mentioned in the report is very important. The power absorbed during the run by series on a predetermined distance has turned out 43% of the power absorbed for the same distance in a car in parallel (start in series).

From data secured from the A.F.A.G. we know that for each unit of average distance, cars run, as a rule, 20% of the time in series and for the rest of the time in parallel. Consequently on 0.8 time unit usually employed in parallel, we should find out the above mentioned decrease of power absorbed at the rate of 43%, by carrying the average of the power absorbed, during a distance covered wholly by series, to 54% of the power absorbed during the same run by alternating series and parallel.

POWER CONSUMPTION: From experiences on uphill running we ascertain that the same distance covered wholly in series instead of in parallel saves 33% power.

CONCLUSIONS

Such tests as above are still insufficient to reach a conclusion at this moment they are shown by the following figures:

<u>Drawback:</u> too much time employed in average distance . . .	21%
<u>Advantage over power employed . . .</u>	54%
<u>Advantage over power absorbed . . .</u>	33%

Were such figures definitive, it could be possible to obtain the highest power at present allotted to trams of 16% with also the same number of people carried (even if at a lower speed). Otherwise we might leave the present power allotment and establish the service of an almost double number of cars with consequent transportation of double the number of people. The A.F.A.G. has in service at present from 120 to 200 cars (the limit is due to the insufficient loads imposed by us) and have at their disposal several hundreds unused cars besides unemployed personnel.

They carry about 500/550,000 people per day. They might carry double that figure by using just the same power maximum established and spare about 15,000 KW power.

Such optimistic data should, however, be checked with more detailed tests.

Dott. Ing. Augusto Benicordi

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Declassified E.O. 12356 Section 3.3/NND No. 785019

MAXIMUM CONSUMPTION ALLOTTED TO A.T.A.C.
ON SUNDAY

3000 KW

2000

1000

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MAX TRAFFIC CONSENTED ON EACH LINE:
1 LOCOMOTOR EVERY 10 MINUTES

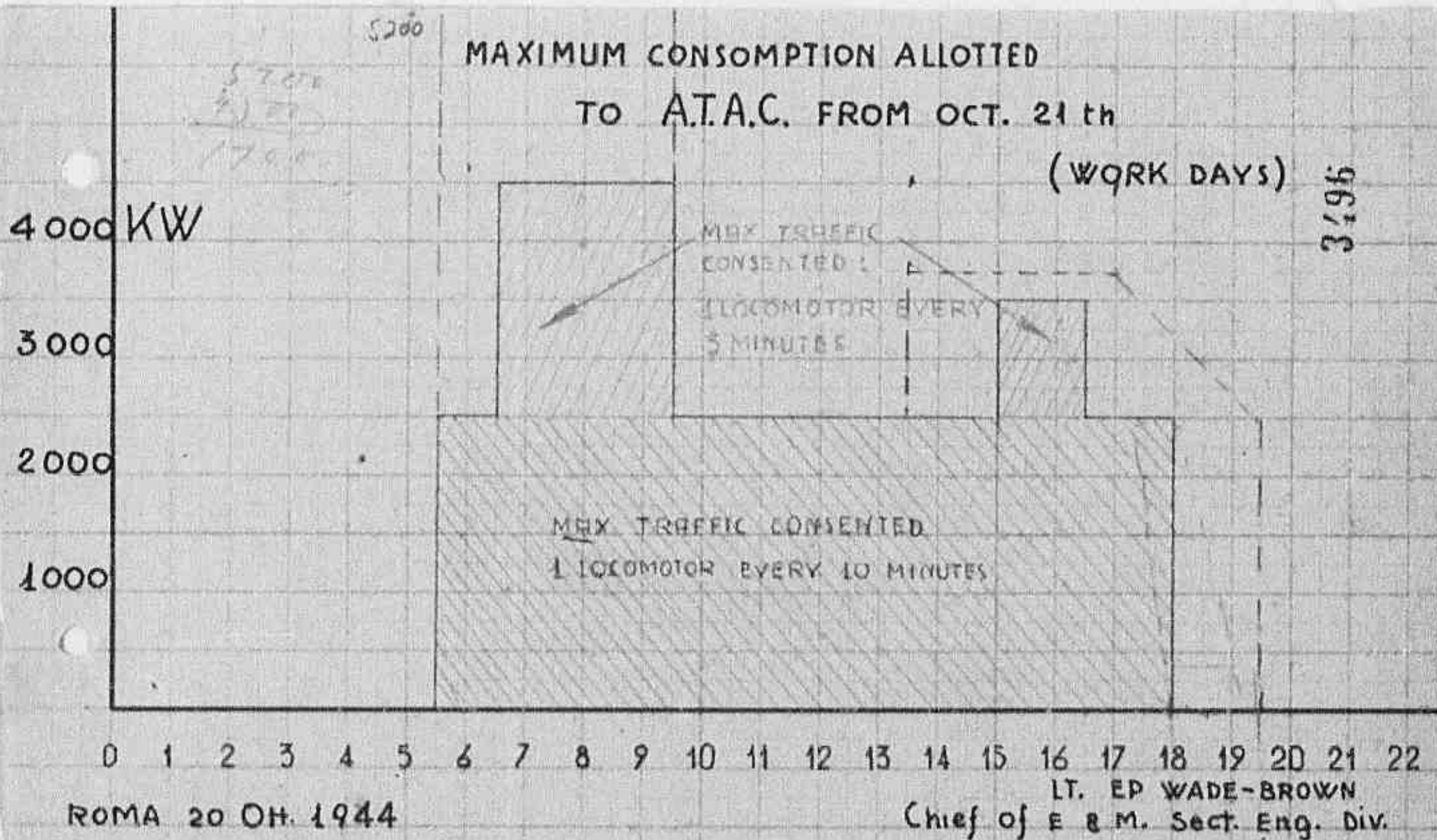
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

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ROMA 20 Oct. 1944

LT. EP WADE-BROWN

Chief of E. & M. Sect. Eng. Div.



MAPS FILMED ON
35MM ROLL

