

Volume No. 1 - October, 1947

Issued By the Technical Training Division

Editorial

The success of this publication can only be assured by your co-operation and assistance with news, stories and articles of interest. We are very grateful to those those who have assisted with this - our first publication. All the articles received cannot be published at the one time, nor can those be published which may be prejudicial to the Service, Sections or Individuals. Technical articles should be general in character so as that they can be read with interest by all of our readers, even those unfamiliar with the subject matter. A section devoted to answers to examination questions set for the final yearly exam will be introduced later.

All articles must be signed by the sender. Nom-de-plume will be used, if desired.

Articles need not be original, and we will be pleased to receive copies, or references to information which is of general interest.

Where articles, extracts or references are taken from other journals, or papers, please indicate the name and date of the Publications, otherwise embarrassment may arise due to infringement of the Copyright Laws with consequent loss of prestige by the contributor.

Letters or items of topical interest, methods of improving the "Bulletin", training, social sporting activities, jokes, etc., will be welcomed.

It is hoped to publish the "Bulletin" monthly. It is your voice and source of information.

Help us help you !

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Social Activities

The Sports and Social committee has been established on a temporary basis pending elections to be held at the beginning of 1948, when it is proposed to discuss this and many other matters at a general conference. In addition to the main committee, a sub-committee has been set up by the election of one representative from each class section by popular vote.

This committee will form a liaison between the trainees, the Instructional staff and the Administration, and it is to be hoped in this way a general spirit of co-operation will exist at all times.

A fund has been established for the creation of various types of sporting Clubs, loans to trainees and to help finance functions etc. Our football teams acquitted

themselves very well this year, and it is indicative of what can be done in other fields.

A picnic and a school ball are well to the fore, but it is unlikely that any of these activities will be under way this year owing to the funds position. However, as the course of five years training is likely to be reintroduced next year, all members now at the College will be able to participate in all the proposed activities.

The following are the members of the various committees for 1947:-

Main Committee – Messrs. G. Lovering, D. Parker, H. Gilson, G. Frewin, F. Hyde and R. Chappelow.

First Year Section 1. J. P. Chandler

2. T. R. Philpott

3. R. L. Ravallion.

2nd Year Section 1. J. D. Haggan

2. J. A. Mellor

3. G .R. Bruce

Third Year Section 1. R. W. Douch

2. G. H. Neilson

3. W. T. Latham

Fourth Year Section 1. P. S. Clark

2. G. H. Neilson

3. J. Webb

B' dcast. A. J. Overton.

It is hoped to hold a number of functions to swell the funds and donations of cards in reasonable playing condition would be very much appreciated. Please remit to Mr. F. Hyde, Engineering College, 48 Nelson St. Annandale.

News in Brief

A very successful dance was held recently at the Legion Hall, Castlereagh St. by the football Club in conjunction with the Postal Institute A Grade club. A very pleasing feature was the number of Instructional Staff present. Mr. G. Buckland, who is Patron of the Club, made presentations of cups to the winners in b and C grade. The dance itself was a huge success and it augers well for the Colleges Ball which we have in mind for the coming year.

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A Christmas hamper costing approximately £6/-/- is to be raffled at 6d. Per ticket to swell the College funds.

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It is anticipated that the number of Technicians-in-Training attending the College will reach an all time high of nearly 450 when the new appointees for Exam. No.2677 for adult trainees commence their course. The new trainees will undergo a minimum of two years training including D.C. and A.C. theory and Practice at the Technical College it is anticipated classes will also be conducted at Grandville, Kogarah and North Sydney.

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It is proposed that the area between the fence and the School building at Alexandria be fenced off to enable the trainees to have a space they can call their own. Mr. Parker is going to arrange some assistance to have the land levelled.

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Approval is being sought for the installation of a front door in the building at Annandale. This will assist in giving us a bit more dignity and status besides ease of access.

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Everyone will be pleased when the Cafeteria facilities are provided. The responsibility for the equipping of the kitchen rests with the Dept. of Works and Housing.

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Some very good articles have been carried over for the next Bulletin. If you have any items of news the Editor would be grateful for them. Keep them coming and show your interest.

Football

The School had a very successful football season. Early in the year we had a battle to overcome our financial difficulties, but the boys, with the co-operation of the staff and students, put their shoulders to the wheel and by holding raffles and also by being regular with their game fees, we were able to fulfil our obligations.

Cups suitably engraved were donated by Messrs. Gee, Young, Mansfield, and Healy of the Instructional staff for the best club man B Grade, the most improved

player B Grade, and the best club man C Grade and the most improved player C Grade respectively. They were won in that order by W. Brown, P. Hurst, W. Latham and T. McGeachie.

The B Grade won the competition in grand style and have been measured for their blazers which will be presented at a later date. The C Grade were beaten in the semi-final by a better side and the manner in which they lost was a credit to them. The Club as a whole pulled together very well during the season and the boys showed their application of the hard work put in by their officials by making presentations to the President Mr. A. Gee, the secretary Mr. R. Bousfield and the Treasurer and Coach Mr. F. Hyde.

The season's activities were wound up with a weekend trip to Goulburn. Leaving Sydney at 6 a.m. on Saturday 13th September we went by road to Goulburn, played two matches and returned at about 10.30 p.m. Sunday night. It was a Grand Finale to a Grand season. The behaviour of the boys was a credit to them as is shown by the letters received from the managers of the hotels in which we stayed,

Tattersall's Hotel,

Goulburn.

Sunday, 14th Sep.

Mr, Frank Hyde,

The 20 players who were under your care at my hotel this weekend, are to be congratulated on their behaviour and courtesy. They were absolute gentlemen and a credit to the P.M.G. School.

Again thanking you on behalf of my wife and myself.

Yours faithfully,

R. E. Green. Prop.

Southern Railway Hotel,

Goulburn.

14.9.47

Mr. Hyde,

Dear Sir,

I'd like to say that the boys staying at this hotel conducted themselves as gentlemen and worthy representatives of the School they came from.

We would be glad to have them as guests at any further date.

Yours faithfully

J. Henville.

The training school staff are usually a studious minded group and it is good to see Mr. Frank Hyde with his cheery smile, the latest song under his arm, swinging down the passage way. Frank gave up an opportunity as a football referee and a lucrative coaching offer to devote the whole of the to the lads' football team, This is a wonderful spirit and we know his guidance and leadership will be equally well developed in other school activities—B.

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Cover Design

What do you think of our cover design?

Many and varied were the designs submitted and the judges experienced some difficulty in determining the winner. However, it was thought the design selected

was simple and depicted the spirit and sentiment behind the Training School Organisation.

The competition for the £1 prise given by Mr. G. Buckland was awarded to that up and coming young man Ian Blake.

The drawing for the plate was prepared very capably by Mr. L. Ives of the Drafting Section.

Congratulations Ian on a very fine effort.

The Committee wishes to thank all those who submitted designs and although they did not win the prise, their efforts show their appreciation of the new venture. While the judges thought all the designs were good, the effort submitted by Mr. R Brown is worthy of a special mention.

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Personal

On behalf of the instructional staff, Mr. Knowles made a presentation to Mr. Mick Jordan who was married to Miss Rita Lawler of Sydney on 13th September. Mick broke his training to join the services and recently qualified as a Technician prior to joining the Instructional Staff. All join in wishing both a happy and prosperous future.

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It is pleasing to see Mr. Harry Graham back on the job again after two month's sick leave. Harry is quite O.K. now and hopes to help the 1st year lads along in his position of assistant Supervisor at Alexandria.

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A feature of the Grand Final of the B Grade Rugby League Football was the effort of Wally Brown. Wally was appointed Technician to Albury a week before, but travelled the 400 miles on the Friday Night to help his team to victory. The trip did not affect him in the least and he played a great game.

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On the 15th September, Russel Maslen, 4th Year, led Miss Beryl Crouch of Clunes to the altar at Bangalow. Congratulations Russel and Mrs. Maslen and your self the best of luck for the future.

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Mr. G. Farquhar, lecturer in Telephone 3rd Year, has bid au revoir to the Training School to take up the position of Acting Engineer in the Western division, Telephone Equipment Section. Gordon, a product of the School, has qualified in two subjects for the Engineer's Examination, Natural Science and Telephone Equipment. We wish both he and Mr. Albert Brown, who left the School earlier in the year to take up a similar position in the Transmission Section, the best of luck for the future in their new spheres. Suitable presentations were made to each on behalf of the staff.

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If, and when, we have a concert, Alan Casey of 2nd Year will be in demand for a vocal item.

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Personalities of the Training Organisation

Mr. F. W Knowles

It is fitting that in our first issue of the Bulletin we feature Mr. F. W Knowles

Supervisor, Technicians in Training, who commenced with the School on the inauguration of the training scheme. Mr Knowles entered the Service at Burwood

as a Temporary Messenger on 1907 and was appointed Telegraph Messenger and Letter Carrier at Canterbury in 1908. In 1909 he was again at Burwood as a Telegraph Messenger. He shed the peaked cap and brass buttons in 1910 to take up appointment as Telephonist at the G.P.O. and it is from this point he took up his long association with tele-communications.

He was appointed as junior Instrument Fitter in 1911 at the workshops and was later transferred to the Telephone Trunk Room. During 1912/15 he was employed on Magneto, C.B. Switchboard and P.B.X. maintenance and installation at Central and the old City and Western Suburbs Exchanges.

Mr. Knowles then received the “call of the wild” and took up duty in 1919 as Mechanic in dry and dusty Coonamble. In those days travelling was done by horse sulky, mail coach and train (when available). He shook of the dust of Coonamble in 1922 and from 1923 to 1926 was again at the “old Love” Burwood on auto exchange maintenance, from where he qualified as Senior Mechanic in 1926. He was then appointed to City South and remained there 1927/1930, a further shift to Ashfield followed and we find him busy on trunk and carrier maintenance and work between 1931/1933. Broken Hill was next on the list, as Foreman Mechanic from 1934 to 1938.

On returning from Broken Hill he commenced the organisation of the Technicians Training School and in 1939 was appointed to the position he now holds.

Mr. Knowles has endeared himself to everybody connected with the School by his kindly and sympathetic approach to each individual problem, his interest in all School sporting and social activities and for being what he is - A Man!

Cricket

The School has entered a cricket team in the C Grade, Centennial Park Competition. The Association gave our representative a very warm welcome at the Annual Meeting and it is hoped we can uphold our prestige in the Cricket comp. The first game against Bondi juniors resulted in a win for the opposition despite a

splendid bowling performance of 8 for 40 By J. Chandler and 6 for 52 by A. hardy both of First Year.

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On Sunday 21st September, a team from 3rd Year, section 2 lead by M. McKinnon played cricket against Section 3 led by W. Latham. A great day was had by all at practically no cost, and Section 3 ran out the winners. The Kit is available on Sundays to any group wishing to play a match, if you contact the Secretary, Mr. F. Hyde, he will make all arrangements.

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On 30th November, a team representing the Instructional Staff will play cricket match against Chatswood Exchange at Wolli Park, Tempe. This should be a good day's cricket and we don't mind it being said that we expect a win.

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Table Tennis

The competition for the Table Tennis Champion of the School is in full swing. The tables At Annandale have been made standard size and since being painted can be compared with any tables on which competitions are played. It is hoped to obtain another table for Alexandria where the game is very popular. The number of entries for the championship far exceed expectations the total numbers for all years was 130, the winner of the cup donated by Mr. G. Cowie will have to survive some very stiff competition. There has been about twenty names suggested as certain winners and as there is certain to be some "champs" among the outsiders, it will be interesting to see how the tipsters fare. However, may the best man win.

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The provision of balls is a very big problem and a constant drain on the finances of the Club, so players are asked to be careful in the handling of them during a game. Hitting a ball to catch it on the rebound considerably shortens the life of a table tennis ball.

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Fifth Year Finals

The fifth year finals were completed on 14th July and we all wish the “Old Boys” the best of luck, now that they have taken up their career. It will not be very long before they are scattered far and wide but we know they will always remain many memories of the old schools at the Workshops and Alexandria. Mr. K. C. Jordan topped the Exam, Messrs. A. Gee and A. D. Mitchell tying for second. The following is a list of the successful candidates:-

A pass 83 - 100 Marks; B pass 70 - 82; C pass 50 - 69.

Name Grade of

Pass

Barford, B. D. B

Bates, S. H. A

Brown, W. F. B

Baxter, A. W. B

Boldiston, J. J. C

Callaghan, L. J. B

Coburn, F. R. B

Collins, A. S. B

Cornish, C. J. B

Daly, A. J. C. B

Davie, J. B
Davidson, B. S. C
Denny, F. R. B
Donovan, P. J. C
Dwight, F. H. A
Eulenstein, E. J. B
Ewins, R. H. B
Gee, A. S. A
Grogan, J. M. B
Hatton, B. J. B
Hatton, S. B
Jordan, M. J. B
Jordan, K. C. B
Kable, R. H. B
Lawler, K. J. B
Lehmann, F. B
Mackness, F. J. C
Moore, J. A. M. B
McGarry, G. C. B
McCarthy, K. L. C
McDonough, W. B
Manning, N. W. C
Mitchell, A. D. A
Paddison, W. N. C

Philpott, W. D. B
Philpott, L. L. B
Pitt, B. G. C
Preece, H. M. A
Quinn, E. N. B
Richardson, K. G. C
Robins, E. C. B
Realph, C. B
Reid, F. C. B
Roser, B. I. B
Russell, E. H. B
Silva, J. B. B
Smith, H. J. B
Smith, L. J. B
Smith, W. J. B
Shipway, K. H. B
Sturt, E. A. C
Sullivan, W. J. B
Turner, H. H. A
White, D. F. B
Wymer, W. S. B
Woodfield, R. N. B
Wood, N. A. S. A
Young, J. B

How Far Have We Come?

The Technicians' Training School has been growing rapidly since its inception, both in achievement and size and a few figures and names will be of interest to not only those who have grown up with the School, but also those who have only recently begun to receive the benefit of its facilities.

In 1939 there were 139 students and only five on the Instructional Staff Mr. Knowles was appointed supervisor, Mr Raynsford Lecturer, Messrs. Gilson and Barnes Instructors and Mr. Stocks, Assistant Instructor. The clerical needs were looked after by Mr. Olsen. It is interesting to note that four of these six persons are still with us. In 1940 the seed provided fertile and we find 211 students and an additions to the staff in Mr. Lovering as Lecturer, Mr. Callaghan as Instructor and Mr. Beilken as Asst. Instructor.

1941 Saw 240 students and further additions to the staff in Messrs. Frewin, Bousfield and Fuller as Asst. Instructors. Still further increases were made in 1942 when there were 260 trainees. Training of military personnel also commenced this year and these factors necessit – staff. New faces were Messrs, Chappelow, Brooks, Weaver and Bailey.

A remarkable feature of 1943 was the drop in trainees to 226. This was due to an insufficient number of candidates attaining the necessary qualifying standard in the entrance examination, and as quality and not quantity is the aim, the fewer enrolments resulted. We lost a foundation member of the staff this year with the death of Mr. Barnes. In 1944 there was a sharp rise to 283 trainees, the staff was increased to 16 with Messrs. Cameron, Wheeler and Miss Courtney comprising the clerical staff.

Further increases in 1945 were trainees to 290 and staff to 21. Rehabilitation courses commenced this year and opened up a new phase of the school's activities.

In 1946 Technical Training became a Separate Engineering Division and Mr. G. Buckland took charge. New Training Schools were established at Annandale and City South. With 358 Trainees and Rehabilitation Courses; further additions to the staff bringing the number to 32, and the clerical staff to 6.

Onward, ever onward we go and in 1947 we find larger rehabilitation classes and a record number of trainees divided between the two Schools at Annandale and Alexandria. You will agree that through a very troublous period the school has gone ahead in leaps and bounds, and we may envisage in the future a modern college having all the facilities that our technical, sporting and social needs require. We have come a long way. How far will we go? Who knows?

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Prizes

One of the main disadvantages associated with the P.M.G. training College is the lack of incentives in the way of yearly prizes. The Committee have been very happy to receive a number of donations, some of which are listed below. While we hope to make prizes available from the General Fund, we look to donations to be our main source in this respect. The prizes received have in most cases been given by those actively associated with the College. Parents, we look to you to help us out in this respect. Any donations will be gratefully accepted and acknowledged in this Bulletin, Mr. Bousfield, will be pleased to hear from well wishers. The following is a list of the prizes and donors:-

Open order £1.10.0 for book Dux 1st Year 1946 Won by A. Cassidy

Open order £2.2.0 for book Dux 1st Year 1947 Won by A. Cassidy

Both prizes presented by Mr. G. Buckland.

Cup for Table Tennis Champ. Presented by Mr. G. Cowie.

Cup for Singles Tennis Champ Presented by Mr. G. McKenzie.

Best Action photo 1947. 1st Prize £1.1.0 presented by Mr. G. Lovering.

2nd Prize 10/6d. Presented by Mr. G. Frewin.

Open order £2.2.0 for books Dux of 3rd Year 1947. Presented by Mr. G. Farquhar.

Other trophies presented by members of the Instructional Staff are mentioned in the Football Note page 4.

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A couple of recent arrivals at Annandale are those of Messrs. Black and Duncan of the Technicians' Training School, Brisbane. The interstate visitors are doing course of 2000 type adjustments and general maintenance, to help them in their instructional duties in the north. We are glad to have them and hope they enjoy their stay.

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Mr. L. W. Todd, Asst. Supv. Personnel, has kindly donated a number of Technical Books to the School Library.

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Prevention of Impending Trouble

Series No.1 . Gas Pressure Alarm in Cables

A. Campbell

A great deal of interest has been shown in the installation of the gas pressure alarm system in the Ashfield to Newtown trunk cable. This type of alarm system is at present confined to important trunk cables but it will be gradually extended to include all trunk, junction and even important subscribers' cables.

The use of gas pressure alarms enable the detection of cable sheath failures before any damage or interference is caused to the various circuits in the cable.

The cable to which the system is applied is separated into gas tight sections by means of special gas seals. These seals are made by injecting a molten Mephalte Compound through a hole bored in the cable sheath. The compound, being fluid, permeates the air voids between the cable sheath, the conductors, and the insulation paper and on cooling, it solidifies and forms an effective gas-tight seal. The sealed sections of the cable are then filled with dry air which is forced into the cable under pressure. The internal pressure of the air varies with the type, size and length of cable but, for average conditions, 10lbs per sq. in. has been found satisfactory. The submarine cables require a greater internal pressure to offset the pressure due to the hydrostatic head of water. Pressure gauges, known as contactors, are installed at intervals of 3000-6000 feet along the cable. Two contacts are fitted inside the gauge which can be made to open or close as required in accordance with the air pressure inside the cable. One contact is mounted on a metallic bellows which expands or contracts as the pressure is decreased or increased within the cable.

The contacts in each contactor are connected to separate legs of a cable pair which in turn is connected to a battery and a suitable alarm at the terminating exchange or repeater Stations. When the air pressure falls to a predetermined value, the contacts close and the alarm operates in the exchange. The contactor which has operated, can then be ascertained by measuring the resistance of the loop so formed.

The exact location of the fault can be determined by measuring the air pressure in the vicinity of the contactor which has operated. The air pressure along the cable can be measured at the Schrader valves which are installed in the cables for test purposes at approximately $\frac{1}{2}$ mile intervals. The air pressure in the cables is directly proportional to the distance from the leak and by joining up the values of pressure plotted on graph the exact position of the leak can be ascertained fairly readily, as indicated in the figure.

Moisture does not gain access to the interior of the cable while the air is escaping thus, many hours are available to enable repairs to be effected before the fault actually shows up in the circuits.

Are you better on the job or on the Field?

(8 correct answers – good, 10 very good, 12 outstanding)

(1) Correct pronunciation of these words:

Conduit, deficit, often, turbine.

(2) Who is known as the father of modern electricity?

(3) The term “wit” and “humour are practically synonymous. True - False.

(4) What is the difference between motive and incentive?

(5) How many Branches are there in the P.M.G. Dept?

(6) Who is at present acting in the position of Chief Engineer?

(7) What are the dimensions of the doubles tennis court?

(8) How can a “Bishop” move in chess?

(9) How many players in a water polo team?

(10) The number of card tricks to be taken to obtain a “Solo”,

(11) How many red balls are required in a game of snooker?

(12) What is the maximum weight for a welter-weight Boxer?

Correct answers are on page 20.

The Editor

When the writer first entered the Dept. it was believed that, providing a man had the physique of a front row forward and the voice of a Bucko's mate, he was fit to make a member of a Line Party. Many and varied were the characters on the job at the time. The belief was held that sailors made the best linesmen as their capacity for working at heights gave them an advantage.

In those days men were taken on as temporary linesmen for six months and if you did not please the Foreman your stay was short indeed. A man was judged not on his intellectual capacity but by the time he spent sinking a hole or splitting a cross arm. Many "Simon Legrees" were in charge of the line parties and overbearing attitudes were regarded as a sign of ability. Training was spasmodic with the less blind leading the blind with a vengeance. The efforts usually being both rough and tough.

Trouble hunting was well-filled occupation in the city and aerial routes radiated in all directions through the main streets. Troubles were accepted as were the elements. People did not strive for the break neck speed of to-day; they walked and talked casually and the telephone service kept in the mood.

Like all avocations the Telecommunications industry struggled through its teething stages to reach a status where trained personnel became an absolute necessity. Gone are the days when a little local knowledge picked up here and there would carry a man through. With their departure emerges a highly trained specialist whose efforts are sure and methodical and by his efficiency will raise the standard of the service of the Engineering Branch to a level to which we may be justly proud.

Yours, D. Parker.

The Editor

A matter which I think should be brought to your notice is the deplorable attitude the daily papers adopt towards the department. On many occasions I have seen articles condemning the lack of telephones, no books in public telephones, and the like. If the writers of these articles could see the state of the P.T.s for example, with glass broken, receivers and books stolen, their words of complaint may be turned to praise for the good condition in which the phones are kept.

R. Brown. 3rd Year

Story of the Month

Dreams of the Future

It is Friday and a very hot Friday, too. The sun is streaming through the lecture room No.2 right on the back of my neck as I listen to Mr. A----- talking about some relay or other. As he talks my thoughts begin to drift ----- First to tomorrow's cricket matches; I wonder if we will beat the Y.M.C.A. They beat D.J.s last week but D.J.s haven't a good bowler in the team, so that wasn't hard ----- and then I wonder what Jack ----- is writing on Bill -----'s back. he'd better look out or Mr. A ----- will spot him and if he does -----.

Isn't the sun warm? It makes me feel tired ----- that voice speaks monotonously on ----- Its making me feel drowsy ----- Oh dear, I'm so tired ----- to much study last night ----- I'll have to cut down on it ----- terribly tired. Oh ----- and Mr. A - ----- is swallowed up in the middle of revolving concentric circles surrounded by blue stars in profusion ----- the blue stars fade and out of the kaleidoscope of concentric circles comes a blurred image which, as it comes closer, seems to liken itself to the shape of a gigantic building stretching itself towards the sky, piercing several clouds on its way up. "Heavens" I say to myself, "What can this be?" And I stand rapt in the wonder of it.

Suddenly I notice that either I am floating towards the building (for I am certainly not walking) or the building is floating towards me and I am still trying to decide which, when I stop in front of a large door (or visa versa) and peer in.

I hesitate on the threshold for a moment, but curiosity overcomes my discretion (it always does) and I walk along a long hallway which, further on, branches into several other passages; I commence to walk (or float along this beautiful oak panelled corridor until I reach the cross passages; I choose the middle one and resume floating along. Soon I come to a door, which I cautiously open ----- and heavens! What is this? I see an enormous room filled with boys of all ages, who recline at ease in luxurious armchairs. They all seem to be listening to a man who stands on a raised platform at the end of the room and who appears to be speaking. What is he saying? --Listen-- “Football yesterday all matches against Melbourne School. The C Grade won 6 to nil”. I know that voice! Can it be? Yes, it is Mr. A----A sudden thought strikes me. Can this be the new Training College? - ---The scene fades and it is all too quickly replaced by those drafted concentric circles, which persist in appearing when they are least expected. But they fade again and are replaced by another scene-----This time an enormous workshop appears. On either side of the room there are rows of lathes each driven by independent motors and in the middle of the shop there are shapers, drills, milling machines and numerous other delights to the pupils’ hearts.

And who is this that advances resplendent in every dazzling white coat? Can this person who is casting such a benevolent smile over his pupils be none other than Mr. U-----? But suddenly the smile disappears and a black look replaces it. Mr. U-----advances on some poor, unfortunate youth, and, seizing him by the shoulder pulls him away from his vice and hisses in angry tones “A foreign order, heh? Back onto the brass block you go!

Again the concentric circles, and see another face familiar to my vision. Yes Mr. P----- . He is taking one of his technical classes and the boys are enjoying it immensely (the age of miracles has not passed) for Mr. B-----, that remarkable mathematician (perhaps mathemagician) has just handed out a slide rule to each boy and they are engrossed in finding out with their new toys how to obviate the necessity for long and uninteresting calculations. And here is Mr. O-----feeling very proud, no doubt, with his new drawing room, where the pupils all have overhead balanced tee-squares with vernier angular setting devices. Three of the lads are receiving cautions, per-----, the old routine.

Again the concentric circles, and pictured in each circle as it approaches I see phases of “school” life as it should be. The football team running out to practise on their own grounds-----picture shows in the school’s own theatre-----music while you work-----the perfect school. But now, as I consider, all the teachers I have

seen seem to have grown suddenly old and I do not know any of the boys. Mr. R---
----looks strange with his long white beard, and can this be Mr. E-----going
bald? A sudden thought strikes me-----perhaps-----I wonder what year this is? I
rush through passages and corridors for miles (it seams) before I locate the main
entrance door, above which, in blazing neon lights I find the words -

P.M.G. Technical Colleges

Rebuilt 1970 A.D.

“Oh, my hat!” I ejaculate, “That accounts for it”-----and I am brought back to the
world of reality by Mr. -----’s staccato tones as he says, “The impedance of the
relay is 1970 ohms” - 1970! Will it ever come?

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All characters depicted are fictitious and not meant to represent any person, living
or dead.

-----oOo-----

The Old Time

While working at Coogee many moons ago, a character Harry Lloyd by name was
in charge. We were erecting a pole, but when it was ready Harry was missing
having adjourned to the local “milk Bar” for some soda water we presumed. After
the pole was erected he arrived on the scene smelling of strong drink and “the truth
not in him” like Norman Lindsay’s fisherman. After inspecting the work which
was all wring from his bibulous viewpoint he proceeded to plumb the pole with an
outsized watch suspended on a chain which could have moored a ship in a gale.
Swaying back and forth and closing the wrong eye as he sighted, he dammed us all
with faint praise by declaring that the sang inary pole was “Plumb” and that’s all.”

D.P.

Popular Technicals

Series No. 1

Rural Automatic Exchanges

G. McKenzie

The newspapers have recently given publicity to the intended installation of small automatic exchanges in country areas.

It might be of interest to mention some of the features associated with automatic working in rural areas but lets first discuss the main features of this type of exchange:

1. A continuous service is provided.
2. Eliminates delay. The subscribers dials the required number. This overcomes articulation errors and also phonetic similarity of numbers. A different language would offer no difficulties, as this has been proved in the Irrigation Area of Leeton.
3. Secrecy. The service of switching operator is not required. (A disadvantage of some rural communities is the lack of a daily newspaper. It has been said that the local telephonist endeavours to overcome this disadvantage),
4. Economy. Eliminates operating staff, accommodation and general building space. The overall economy compared with manual systems is approximately 23%.

The number of subscribers connected of course varies. The average at present would be between forty and fifty. The exchanges are situated at more or less isolated locations, therefore the major technical problem is the maintenance of an efficient power supply.

The voltage required is approximately 46 volts and storage batteries are used. It is therefore obvious that a method of recharging must be employed. If an efficient commercial power supply is available, an automatic charger (Transrector) is used and the problem is solved. However, in most cases there is no supply and other methods must necessarily be adopted to maintain the battery.

(a) Charging over trunk line from parent exchange. The battery is float charged, automatically cutting in when the trunk line is not in use. Two sets of batteries are used and the charge can be transferred from one to the other by the technician dialling a certain number from the main exchange.

(b) Servicing from technician's head station. In this case duplicate sets of 8 six volt car batteries are used. The discharged battery is taken away to be charged.

(c) Using a petrol electric charging set. In this method the motor can be started and stopped by hand by dialling a number from the parent exchange.

A technician visits the exchange fortnightly to carry out routine tests and read the meters. It is therefore necessary to extend an alarm to the main exchange in the event of equipment failure such as a fuse operating. When a fault occurs an automatic ring is sent over a normal trunk line to the main exchange. This indicated the nature of the fault. The technician may check subsequently by dialling a particular number.

In later issues it is proposed to discuss other features associated with rural automatic telephony and to point that a country technician must know a little about telephony besides ability to display a sound knowledge of sheep, wheat, share farming, etc.

.....

Will you write an article for the Bulletin? Don't forget it is your publication and the Editor invites articles or news from you. If you feel that you just cannot write

something to your satisfaction and you have an item of news, just tell what you have to Mr. F. Hyde. Or you may see of some technical advance in a paper or magazine. Cut it out and send it in, stating the source.. We may be able to use it

Do You Know?

Answers - Quiz. Page

1. Con-dit, def-is-it, off-en, tur-bine
2. Michael Faraday.
3. False
4. Motive is a driving force within a person and incentive is the agent which starts it off i.e. Thirst and beer.
5. Nine. Postal, Telephone, Telegraphs, Engineering, Buildings, Wireless, Personnel, Stores, and Transport, Finance.
6. Mr. N. Hayes
7. 78 x 36 feet.
8. Diagonally on the colour on which it stands.
9. Seven.
10. Five.
11. Fifteen.
12. 10st. 7Lbs.

That approximately 37% of the exempt Line Staff and 53% of the exempt Technical Staff have undergone under gone a primary course training of one month as at 30.6.47.

That approximately 300 Technicians-in-training and 450 Linemen-in-Training, junior and adults, will be recruited in 1948.

Rates of Pay for Technicians-in-Training

Standard Actual

Under 17. £93 + £32 £125

At 17 £111 +£32 £143

At 18 £135 +£32 £167

At 19 £168 +£32 £200

At 20 £204 +£32 £236

It may be of interest to note that the £32 Marginal increase will only be given to financial members of the P.T.T.A.

This Bulletin is issued for your information and enjoyment. Pass it on to your parents and friends, they will be interested.

If you do not like it, please tell us so. We appreciate encouragement too.

Letters for publication should not exceed 150 words, All correspondence should be addressed "The Editor, Engineering College Bulletin, 48 Nelson St. Annandale.

"A human being is only happy when truly interested."