"Workshop organisation tends to be a systematic co-ordination and combination of efforts with the aid of money, men, machinery, material, methods in a manner as would result in the maximum manufacturing efficiency with the minimum cost."

... ... An American Author.
TECHNICAL set up is the back bone of the Roadways organisation and on its efficiency depends the success of the whole scheme. As the Roadways buses are run by mechanised device, it is natural for them to go out of order. The technical branch of the organisation helps in this respect by bringing the buses to order as soon as possible, thus avoiding hardships to the travelling public and eliminating losses to the Government. Looking after the comfort of the passengers or attending to road failures is not the only thing prompting the creation of the technical branch but much more than this is at stake and that is the heavy capital involved in the scheme. The U.P. Government has entered the field of Road Transport with the object of providing better and cheaper services and amenities to the public and at the same time working on the business principles with a view to securing a reasonable return on the capital invested. Because of the fact that buses or the engines have limited life, they have to be regularly and periodically checked, tested, serviced, overhauled and repaired so that they remain roadworthy for a long time before being finally discarded. Even after discarding, they are to be systemetically dealt with and best use of the worst is to be made. Reclamation are retrieving of worn out parts is to be planned. But the question is who is to do all
these things? It can certainly be a technical establishment which should be of considerable size as the number of vehicles on the whole runs to thousands and the capital invested on these comes crores of rupees.

EARLY HISTORY: In view of all that has been mentioned above, workshops were established, from the very inception of the scheme, in each region under the charge of a Foreman, side by side with the starting of Traffic and Office Establishment. In the beginning the Government was of the opinion that Foreman assisted by Mechanics and other technical hands would be competent enough to look after these workshops and the fleet of buses was a brand new and would remain like this for a long time to come. Here the Government erred. The result was that vehicles could not get as much attention and care as they should have and the fleet became old far earlier than it was imagined. Thereafter the Government realised its initial error of judgement and the appointment of an expert Engineer designated as Service Manager for each workshop was though essential. However, the appointment of the Service Manager, due to low salary could be made nine to twelfth months after the Roadways started functioning. The pay scale of Foreman ranged from 200-300 and it was not possible to find really capable technical hands on this salary who could hold an independent charge of the workshop. The Public Service Commission was therefore asked to appoint the Service Managers in the grade of Rs. 400-1000. Even then, persons capable of holding the above posts were not available and only after one year the organisation was in a position to appoint Service Manager for each regional workshop.
At present every regional workshop is under the direct charge of an experienced and well qualified Service Manager.

Moreover, Government paid top priority consideration to Regional Workshop and their buildings began to be constructed from the year 1948. Government had tried to make these workshops of modern style and to equip them with most up-to-date tools and machineries. The State succeeded in these efforts to a great extent as fine workshops were constructed in each region together with the provision of necessary equipments, such as Telcamite Sets, Diesel Generators, Myres Pumps, Battery Charges, Air Compressors etc.

WORKSHOP ORGANISATION

A workshop is really the backbone of the Roadways organisation. Its existence is of paramount importance because thousands of buses are running under the Roadways Organisation and a large number of them go naturally out of order, requiring minor or major types of repairs. If there had been no workshops for repairing these disordered vehicles, the working of Roadways Organisation would have come to a stand still and the nationalisation scheme of the Government would have failed miserably. But workshops are there to keep the Roadways organisation functioning ceaselessly. It was pointed out by an author "The nationalisation of Road Transport in U.P. came by chance, but the workshop put it on a strong footing and made it an unshakable and permanent feature of our national economy".

The workshop organisation of the Roadways consists of a Central Workshop at Kanpur, nine Regional Workshops at each region and fifty two sub regional or depot workshops interspersed throughout the State. From April 1966 to December, 1966
the Central Workshop overhauled 1079 engines and made 312 new engines. 124 bodies of the buses and 76 buses repaired. The reiterating section of the Central Workshop reiterated 6,860 tyres during 1966-67. Besides a number of overhaul work and electric repairing works etc. was done. All these developments leaded the roadways to a saving of rupees 1,31,918.90 during 1966.** The following list of Regional Workshops and sub-regional workshops shows the extensive development that the State has made in this direction:

<table>
<thead>
<tr>
<th>LIST OF REGIONAL WORKSHOPS AND SUB-REGIONAL WORKSHOPS OF U.P. GOVERNMENT ROADWAYS.**</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AGRA REGION</strong></td>
</tr>
<tr>
<td>1. Idgah, Agra</td>
</tr>
<tr>
<td>2. Mathura</td>
</tr>
<tr>
<td>3. Aligarh</td>
</tr>
<tr>
<td>4. Hathras</td>
</tr>
<tr>
<td>5. Shikohabad</td>
</tr>
<tr>
<td><strong>ALLAHABAD REGION</strong></td>
</tr>
<tr>
<td>1. Albert Road, Allahabad</td>
</tr>
<tr>
<td>2. Zero Road, Allahabad</td>
</tr>
<tr>
<td>3. Mirzapur</td>
</tr>
<tr>
<td>4. Varanasi</td>
</tr>
<tr>
<td>5. Jaunpur</td>
</tr>
<tr>
<td>6. Pratapgarh</td>
</tr>
<tr>
<td><strong>BAREILLY REGION</strong></td>
</tr>
<tr>
<td>1. Bareilly</td>
</tr>
<tr>
<td>2. Shahjahanpur</td>
</tr>
<tr>
<td>3. Moradabad</td>
</tr>
<tr>
<td>4. Badaun</td>
</tr>
<tr>
<td>5. Bijnore</td>
</tr>
</tbody>
</table>

GORAKHPUR REGION:
1. Gorakhpur (Regional Workshop)
2. Azamgarh (Sub-regional Workshop)
3. Basti
4. Gonda
5. Deoria
6. Ballia
7. Birdgahat
8. Akbarpur
9. Balrampur
10. Ghazipur

KANPUR REGION:
1. Rawat Pur (Central Workshop)
2. Kanpur Road, Nawabganj (Regional Workshop)
3. Chunniganj, Kanpur (Sub-regional Workshop)
4. Mahoba
5. Fatehgarh
6. Etawah
7. Fatehpur
8. Banda
9. Bewar
10. Ayuraiya
11. Rath

LUCKNOW REGION
1. Terhi, Kothi, Lucknow (Regional Workshop)
2. Charbagh, Lucknow
3. Oliver Road
4. Sitapur
5. Unnao
6. Sultanpur  
7. Rai Bareilly.  
8. Hardoi.

**MEERUT REGION:**
1. Meerut  
2. Saharanpur  
3. Hardwar  
4. Dehradun  
5. Bulandshaher  
7. Delhi  
8. Khurja  
9. Gurmukteshwar

**KUMAON REGION:**
1. Haldwani  
2. Kath Godam  
3. Bhoowali  
4. Ranikhet

**GARHwal REGION:**
1. Katedwara

**TANAK PUR REGION:**
1. Tanakpur

Now a brief description of each type of workshop is given as under:

**CENTRAL WORKSHOP**

The establishment of the Central Workshop at Kanpur on 25th October, 1947 is one of the greatest landmarks in the history of Roadways in U.P. It serves the whole of the Uttar Pradesh and saves for the country valuable foreign
exchanges to the tune of lacks of rupees. Originally this workshop was taken over by the Roadways from the Industries Department which was winding up its scheme of "Central Workshop". The Central Workshop is situated at Rawatpur in the suburbs of Kanpur. The area occupied by it is fairly large and is adequate for garaging 10,000 vehicles excluding repair and overhaul workshops.

The Central Workshop is under the charge of a Chief Mechanical Engineer who is responsible to the Transport Commissioner, U.P. for its efficient working. He is assisted in the performance of his duties by a number of Group Engineers, Assistant Group Engineer, Foreman, Assistant Foreman, Supervisors etc. on the technical side and by the Accounts Officer, Stores Officers, Medical Officers other staff etc. on the non-technical side. Mr. R.K. Basu is the present Chief Mechanical Engineer. The following chart shows the whole administrative working of the Central Workshop:-
This workshop is fully equipped with all requisite modern machines and tools for the purpose of carrying out major kind of repairs in the Roadways buses. The main activities of the workshop in respect of repairs may be noted as below:-

**MAJOR AND MINOR REPAIRS:**

In this section, such repairing work of all Roadways vehicles is done which cannot be done in the Regional Workshops. Broadly speaking the following things are done here:-

1. Repair of front show and mid guard and bumper
2. Dismantling and mounting of engine.
3. Radiatory reconditioning, repairing, fitting etc.
4. Oil unit repairs setting right the petrol system etc.
5. Setting right Gearbox, clutch assembly etc.

**BODY BUILDING:**

The Central Workshop builds bus bodies and thus meets the requirements of the newly organised Roadways in respect of the building of bodies. Prior to the construction of the bodies of the buses by the Central Workshop, Kanpur, orders used to be placed with the General Motors Ltd., Bombay which entailed heavy expenditure. It has built a numerous type of bodies among whom chief luxury buses, city buses and non stop buses. In repairing the above types of bodies, it has to start right from the fundamentals and has to design the whole thing along with the actual construction of the buses. It is the Central Workshop which introduced the seats with arm rests in luxury rests buses. It also improved the method of carrying luggage on the roof and made the buses dust proof.
Day to day improvements are still being carried out and the latest introduction is of aluminium bodies. During April to December, 1966 318 bodies of new buses were built.

**COMPLETE ENGINE RECONDITIONING:**

Reconditioning gives new lease of life to the engines which would have otherwise been thrown as scrap. After covering about 30,000 to 40,000 miles, it becomes necessary to thoroughly overhaul the bus and to place certain parts, if necessary. This work is done in this section. The present position is that this section is meeting the needs of the whole of Roadways and other Government Departments of the State. Broadly speaking this work of **engines reconditioning** of engines comprises of dismantling, inspection, sub assembly, rectification, running, testing etc. During the period from April to December, 1966 842 engines were reconditioned and 54 engines were rectified in the Central Workshop.

**BATTERY CHARGING AND REPAIRS:**

In this section is done dismantling and reclaiming of batteries, grid cutting and treating assembly, charging, testing, repairing and other things. Upto December, 1966 919 new batteries were prepared and 152 batteries were repaired.

**REJUVENATION OF BUSES:**

The process of turning the old bus into an almost new bus is called 'rejuvenation of bus'. Such rejuvenation is really speaking a necessity due to the prohibitive prices of bus chassis. In that section, the old body is completely removed and the chassis is stripped down completely so that all parts may be cleaned and inspected. The frames are carefully examined and whereever there are cracks they are welded.
The chassis is given 50% overhang and clutch, Gearbox is examined and defects, if any, are removed. Springs are given new temper and where leaves are broken they are changed. Seats are also changed and new seats of foam-rubber covered with plastic leather cloth in place of old seats of jute and coir are fitted in the buses.

CENTRAL STORE:

The Central Workshop also maintains a 'Central Store' in which motor spare parts are kept. This store caters to the requirements of all the Regional as well as sub-Regional Workshops of the Roadways organisation and that of the other Government Departments. In order to make its working smooth and efficient, the entire 'Central Store' has been organised in a most scientific manner and most up-to-date system of maintaining stores is being followed. The purpose of the establishment of that store section is to maintain uniformity in standard of articles used and to provide the Government and Roadways organisation the advantage of bulk purchases of stores. The stores are distributed to the various regions according to their demands.

TYRE RETREADING SECTION:

In 1956, a Tyre Retreading Plant was purchased by the Roadways organisation from the disposals. This Plant after reconditioning has now been set up in a newly constructed Workshop at Kalpi Road, Kanpur. The requisite technicians have been trained and the plant is now functioning efficiently. During the first eight months of 1967, 6,860 tyres have been retreaded and gradually the output is being enhanced to meet the multiplying demands of the Roadways.
REGIONAL WORKSHOPS:

Besides one Central Workshop, there are eight Regional Workshops in each region. Each workshop is under the charge of a Service Manager who is assisted by Senior Foreman and other technical personnel. The Service Manager is responsible to the Regional General Manager for the efficient working of the workshop. These workshops are fully equipped with modern machines and are capable of carrying out all types of maintenance, body resheeting, painting, renovation of bodies, light over-hauling of engines, electrical repairs etc. Retreading of old and worn out spare parts for further use in vehicles is also carried out in these workshops which resulted in a saving of Rs. 1,31,818.90 approximately during 1966-67. In short, repairs of all types are done here except complete stripping of chassis or reconditioning of engines. In order to ensure the use of correct and standardised parts and materials, each Regional Workshop also maintains a sufficiently big store of spare parts and other accessories to be utilised in day-to-day working. The following chart shows the administrative machinery of a Regional Workshop:

```
SERVICE MANAGER
  | SENIOR FOREMAN
  |    | JUNIOR FOREMAN
  |    |   |
ELECTRICIAN MECHANICS
|    | |
ASSTT. ELECTRICIAN ASSTT. MECHANICS
```

Others e.g. carpenters, upholsters, blackmats, painters, turners, welders, cleaners etc.
The Regional Workshop of Kanpur is under the charge of Sri K.N. Nigam. He is assisted by a Foreman, Junior Foreman etc. in the performance of his task. The following table shows the fleet position of Kanpur Regional Workshop on November, 1967. 

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of buses in the Region</td>
<td>618</td>
</tr>
<tr>
<td>Number of buses in R.C.W., Kanpur</td>
<td>22</td>
</tr>
<tr>
<td>Total number of buses in Kanpur Region</td>
<td>640</td>
</tr>
<tr>
<td>Number of trucks in the region</td>
<td>18</td>
</tr>
<tr>
<td>Number of trucks in the R.C.W., Kanpur</td>
<td>3</td>
</tr>
<tr>
<td>Taxis (Roadways)</td>
<td>5</td>
</tr>
</tbody>
</table>

As many as 93 buses were renovated during the year of 1966-67. This work was done departmentally and sanction for additional temporary staff on daily wages was taken for different periods from time to time. 52 Merceded Diesel buses were sent to Central Workshop during the year for major accidental repairs. The curtains fitted to the windows of the buses had been changed and all the windows of the buses had been fitted with perpex sheet of triplex glasses. The repairing and other works done by the Regional Workshop can be understood more clearly from the below tables:

* Obtained by the Courtesy of General Manager, Kanpur Region.
## STATEMENT OF REGIONAL WORKSHOP FOR THE YEAR 1962-63*

<table>
<thead>
<tr>
<th>Month</th>
<th>No. of vehicles completely overhauled</th>
<th>No. of vehicles painted</th>
<th>No. of vehicles repaired</th>
<th>No. of armature renewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>April '65</td>
<td>68</td>
<td>32</td>
<td>16</td>
<td>-</td>
</tr>
<tr>
<td>May</td>
<td>58</td>
<td>38</td>
<td>18</td>
<td>-</td>
</tr>
<tr>
<td>June</td>
<td>36</td>
<td>35</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>July</td>
<td>44</td>
<td>30</td>
<td>11</td>
<td>-</td>
</tr>
<tr>
<td>August</td>
<td>55</td>
<td>29</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>Sept.</td>
<td>33</td>
<td>36</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td>October</td>
<td>48</td>
<td>42</td>
<td>13</td>
<td>-</td>
</tr>
<tr>
<td>November</td>
<td>52</td>
<td>26</td>
<td>9</td>
<td>-</td>
</tr>
<tr>
<td>December</td>
<td>61</td>
<td>41</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>January '66</td>
<td>59</td>
<td>39</td>
<td>19</td>
<td>7</td>
</tr>
<tr>
<td>February</td>
<td>66</td>
<td>35</td>
<td>16</td>
<td>-</td>
</tr>
<tr>
<td>March</td>
<td>63</td>
<td>35</td>
<td>14</td>
<td>13</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>643</strong></td>
<td><strong>418</strong></td>
<td><strong>160</strong></td>
<td><strong>29</strong></td>
</tr>
</tbody>
</table>

**SUB-REGIONAL WORKSHOPS:**

These workshops have been established to provide repairs at distant places because Regional Workshop are localised at Regional Head Quarters and they cannot provide help due to long distance if any accident or other thing happens. Each Sib-Regional Workshop is under the charge of a Senior Station Incharge who is assisted by a Junior Foreman, Mechanic, Assistant Mechanic, Cleaner etc. The Service Manager of the region, periodically inspects these small units and is responsible for their efficient working. Each workshop

*Statement obtained by the Courtesy of General Manager, Kanpur.*
is equipped with necessary tools and equipments and daily service, weekly preventive service and running repairs are done to the vehicles.

**SUB REGIONAL WORKSHOP IN KANPUR REGION:**

At present there are 52 Sub-Regional Workshops in Uttar Pradesh out of which 8 are in Kanpur Region which are located at:-

1. Chunniganj, Kanpur.
2. Etawah
3. Furrukhabad
4. Fatehpur
5. Mahoba
6. Banda
7. Bewar
8. Auraiya.

At each workshop daily service and running repairs are done to the vehicles. Some of the workshops are equipped with good tools but most of them do not possess adequate tools and machines. Out of the above workshops, electricity is available only at Kanpur, Etawah, Furrukhabad, Fatehpur, Mahoba and Banda. In Bewar workshop where electricity is not available, diesel generating units have been provided for power and light. Besides the above 8 Sub-Regional Workshops, there are two small depots at Allahabad and Auraiya which are under the charge of Fatehpur and Etawah respectively.
TRAINING OF TECHNICIANS:

The Central Workshop has initiated an 'Automobile Technicians Training Scheme' under which apprentices are recruited for the training of the Automobile Engineering. On the completion of the training, the trainees are absorbed at workshop organisation of the roadways. A large number of candidates are also allowed training as unpaid apprentices at these workshops. Roadways technician also enjoys the facilities of specialised training in Germany and the U.K. at the cost of M/s Ashoka Leyland and M/s Daimler Bonz respectively. During 1963-64, two Assistant Transport Engineer and one Service Manager proceeded for the advance training to the United Kingdom under the training scheme of M/s Ashoka Leyland. With the enforcement of Apprentices Act in the transport industry, arrangements were made during 1965-66 to impart technical training to 552 apprentices in different trades namely, Motor Mechanics, Electricians, Sheet Metal Work, Turner, Blacksmith, Carpenter, Welder etc., in various workshop of the roadways.

In 1966 a group of 6 apprentices went to U.K. for specialised Mechanical Training which is expected to return back in 1969. Besides efforts are being made to call the Experts of Germany, Yugoslav and U.K. at Central Workshop, Kanpur so that a number apprentices may be trained under their expert supervision, which will relieve the shortage of automobile technicians in the State.*

TRAINING OF MOTOR DRIVERS:

In order to meet the shortage of motor drivers, the Roadways recruited 66 apprentices for training as drivers out of which 50 trainees have completed their courses. These trainees have been under employment also but the remaining 16 trainees are still to complete their training courses likely to be finished in March, 1968. The departmental workers and cleaners have also been given driver training.* It is expected that 132 drivers will be trained at Kanpur, Lucknow, Allahabad, Varanasi and Meerut regions during 1968-69.