

GOVERNMENT OF KARNATAKA

STUDY OF DEFICIENCIES OF TRAINING INFRASTRUCTURE
IN THE STATE FOR TRAINING IN VOCATIONAL TRADES

MANPOWER AND EMPLOYMENT DIVISION

PLANNING DEPARTMENT

BANGALORE

JUNE, 1986

FOREWORD

As desired by the Department of Employment and Training in September 1982 to undertake a detailed study on the deficiency of Training Infrastructure in the State for Training in vocational trades vis-a-vis Integrated Rural Development for enlarging the scope for vocational training in the State, Manpower and Employment Division of the Planning Department, took up this study.

This study has brought out the need for streamlining the availability of equipments, replacements as well as new purchases based on the Intake capacity, number of machines and prescriptions of standards and norms for replacement of machinery. It also highlights the need to have adequate delegation of powers to the Principals for undertaking small repairs and replacements and provision of additional funds. The need for establishment of a Maintenance Squad for maintenance of machinery and arranging for the repairs, provision of adequate buildings and hostel facilities to Industrial Training Institutes are some of the major findings of this report. I hope the findings of this study would lead to steps in the direction of improving the quality of training in Industrial Training Institutes.

We are thankful to the Principals of various Industrial Training Institutes and the Directorate of Employment and Training for having provided necessary information in the preparation of this report. I am thankful to Dr.M.A.Srinivas, Director, Manpower and Employment Division of the Planning Department and his colleagues for their Co-operation in completing this study quickly.

Bangalore,

Date:14-4-1986.

D.M.NANJUNDAPPA
Commissioner and Secretary to Govt.,
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and Statistics and Planning Department.

P R E F A C E

Craftsman Training is an important area of building up of Technical Manpower needed for the development of the Society. In this, the availability of a sound infrastructure in the Training Institutes goes a long way in improving the quality of training imparted to the students.

This report undertaken at the instance of the Directorate of Employment and Training, highlights some of the deficiencies in the facilities available in the State and makes some recommendations for their improvement.

In the preparation of this report, Sri.M.Sathyanarayana, Joint Director, Sri.K.Firoze Ahmed, Deputy Director and Sri.S. Chandrashekarana, Assistant Statistical Officer, have rendered assistance.

Bangalore,

Date:14-4-1986.

M.A.SREENIVAS,
Director,
Manpower and Employment Division,
Planning Department.

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ಕರ್ನಾಟಕದಲ್ಲಿ ಕೈಗಾರಿಕಾ ತರಬೇತಿ ಸಂಸ್ಥೆಗಳಲ್ಲಿ ಲಭ್ಯವಿರುವ ತರಬೇತಿಗೆ ಬೇಕಾದ ಮೂಲಭೂತ ಸೌಕರ್ಯಗಳ ಕೊರತೆ ಅಧ್ಯಯನದಿಂದ ಹೊರಬಂದ ಕೆಲವು ಮುಖ್ಯ ಅಂಶಗಳು :-

ಕೈಗಾರಿಕಾ ತರಬೇತಿ ಸಂಸ್ಥೆಗಳಲ್ಲಿ ಸದ್ಯದಲ್ಲಿ ಇರತಕ್ಕ ತರಬೇತಿಗೆ ಬೇಕಾದ ಸೌಕರ್ಯಗಳ ಕೊರತೆಗಳನ್ನು ಗುರುತಿಸಲು ಜನಶಕ್ತಿ ಮತ್ತು ಉದ್ಯೋಗ ವಿಭಾಗದ ಒಡಂಬಡಿಕೆ ಅಧ್ಯಯನವನ್ನು ಕೈಗೆತ್ತಿಕೊಂಡಿತ್ತು.

1) ಉಪಕರಣಗಳ ಲಭ್ಯತೆ :- (ಅ) ತರಬೇತಿಗೆ ಬೇಕಾದ ಯಂತ್ರಗಳು ಮತ್ತು ಇತರೆ ಉಪಕರಣಗಳನ್ನು ಸರಬರಾಜು ಮಾಡುವಲ್ಲಿ ಅನುಸರಿಸಬೇಕಾದ ಸೂಚನೆಗಳನ್ನು (Economics) ಅನುಸರಿಸಬೇಕಾದುದು, (ಬಿ) ಅನುಸರಿಸಬೇಕಾದ ಸೂಚನೆಗಳನ್ನು ನಿಗದಿಪಡಿಸುವೇ ಇರುವುದು, ಇವು ಹೆಚ್ಚಾಗಿ ಪ್ಯಾಟರ್ನ್ ಮೇಕರ್, ಕಟ್ಟಿಂಗ್ ಮತ್ತು ಟೇಲರಿಂಗ್, ಶೀಟ್ ಮೆಟಲ್ ಕಟ್, ವೈರಮನ್, ಎಲೆಕ್ಟ್ರೋ ಪ್ಲೇಟರ್, ಇನ್‌ಸ್ಟ್ರುಮೆಂಟ್ ಮೆಕಾನಿಕ್, ಮತ್ತು ಡ್ರಾಫ್ಟ್‌ಮನ್ ವೃತ್ತಿಗಳಲ್ಲಿ ಕಂಡು ಬಂದಿವೆ - (ಕ) ಸರಬರಾಜಿನಲ್ಲಿ ಒಂದು ಸುವ್ಯವಸ್ಥೆ ಇಲ್ಲದೆ ಇರುವುದು, (ಉ) ಕೆಲವು ಉಪಕರಣಗಳನ್ನು ಕೈಗಾರಿಕಾ ತರಬೇತಿ ಸಂಸ್ಥೆಗಳಿಗೆ ಸರಬರಾಜು ಮಾಡದೇ ಇರುವುದು (ಇ) ಸುಮಾರು ಯಂತ್ರಗಳ ಮತ್ತು ಉಪಕರಣಗಳ ದುರಸ್ತಿ ಮಾಡಬೇಕಾದ ಪರಿಸ್ಥಿತಿ ಇರುವುದು ದುರಸ್ತಿಗಾಗಿ ನಿಂತಿರುವ ಉಪಕರಣಗಳಲ್ಲಿ ಡ್ರಾಫ್ಟ್‌ಮನ್, ಮೆಕಾನಿಕ್, ಟರ್ನರ್, ಇಲೆಕ್ಟ್ರೀಷಿಯನ್, ಮೆಕಾನಿಕ್ ಜನರಲ್, ಮಷಿನ್‌ವೆಲ್ಡ್ ತರಬೇತಿಗಳಲ್ಲಿ ಹೆಚ್ಚಾಗಿರುತ್ತದೆ. ಮತ್ತು (ಊ) ಕೆಲವು ಯಂತ್ರಗಳು ತಾಂತ್ರಿಕ ಬದಲಾವಣೆಗಳಿಂದ ನಿರೂಪಯುಕ್ತವೆಂದು ಹೊಂದುವುದು. ಇವು ಹೆಚ್ಚಾಗಿ ಪಿಟರ್, ಮತ್ತು ಮಷಿನ್‌ವೆಲ್ಡ್ ವೃತ್ತಿಗಳಲ್ಲಿ ಕಂಡು ಬರುತ್ತದೆ.

2) ಉಪಕರಣಗಳು ಮತ್ತು ಯಂತ್ರಗಳ ಬೇಡಿಕೆ :- ಹೆಚ್ಚುವರಿ ಬೇಡಿಕೆಯು ಉಪಕರಣಗಳು ಮತ್ತು ಯಂತ್ರಗಳಿಗೆ ಮುಖ್ಯವಾಗಿ ಈ ಕೆಳಕಂಡ ಕಾರಣಗಳಿಗಾಗಿ ಇರುತ್ತವೆ. (ಆ) ಹಾಲಿ ಲಭ್ಯವಿರುವ ಉಪಕರಣಗಳು ಮತ್ತು ಯಂತ್ರಗಳು ಸಾಲದೆ ಇರುವುದು. (ಬಿ) ಯಂತ್ರ ಕೆಲವು, (ಕ) ತಾಂತ್ರಿಕ ಬದಲಾವಣೆಗಳು, (ಉ) ವಿದ್ಯಾರ್ಥಿಗಳ ಸಂಖ್ಯೆಯಲ್ಲಿ ಏರಿಕೆ, (ಇ) ಬೇಡಿಕೆಗಿಂತ ಕಡಿಮೆ ಸರಬರಾಜು. ಉಪಕರಣಗಳು ಮತ್ತು ಯಂತ್ರಗಳು ಡ್ರಾಫ್ಟ್‌ಮನ್, ಮೆಕಾನಿಕ್, ಮಷಿನ್‌ವೆಲ್ಡ್, ರೆಪ್ರಿಜೆಂಟರ್ ಮತ್ತು ಏರಕಂಡೀಷನಿಂಗ್, ಇಲೆಕ್ಟ್ರೀಷಿಯನ್, ಮೋಟಾರ್ ವೆಹಿಕಲ್ ತರಬೇತಿ ವೃತ್ತಿಗಳಲ್ಲಿ ಕಡಿಮೆ ಸರಬರಾಜು ಆಗಿದ್ದಾಗಿ ಕಂಡುಬರುತ್ತದೆ. ಯಂತ್ರಗಳು ಮತ್ತು ಉಪಕರಣಗಳು ಕೆಲಸ ಮಾಡದೇ ಇರುವುದಕ್ಕೆ ವಿದ್ಯುಚ್ಛಕ್ತಿ ಸರಬರಾಜಿನಲ್ಲಿ ಅಭಾವ, ಸ್ಥಳಾವಕಾಶದ ಕೊರತೆ, ಬದಿ ಭಾಗಗಳ ಸರಬರಾಜು ಇಲ್ಲದೆ ಇರುವುದು ಮತ್ತು ಬದಿ ಭಾಗಗಳು ಲಭ್ಯವಿಲ್ಲದೆ ಇರುವುದು ಕಾರಣಗಳಾಗಿರುತ್ತವೆ.

3) ಉಪಕರಣಗಳ ಮತ್ತು ಯಂತ್ರಗಳ ದುರಸ್ತಿ ಮತ್ತು ಮೇಲುಸ್ವಾವರಿಗಾಗಿ ಲಭ್ಯವಿರುವ ಸೌಕರ್ಯಗಳು :-

13 ಕೈಗಾರಿಕಾ ತರಬೇತಿ ಸಂಸ್ಥೆಗಳಲ್ಲಿ ದುರಸ್ತಿ ಮಾಡಲು ವರ್ಕ್ ಶಾಪ್ ಇರಲಿಲ್ಲ. 13 ಸಂಸ್ಥೆಗಳಲ್ಲಿ ದುರಸ್ತಿ ಮತ್ತು ಮೇಲುಸ್ವಾವರಿಗಾಗಿ ಬೇಕಾಗುವ ತರಬೇತಿ ಸೌಕರ್ಯಗಳು ಇರಲಿಲ್ಲ. ದುರಸ್ತಿಗಾಗಿ ಪ್ರತ್ಯೇಕ ಸಿಬ್ಬಂದಿ ಇದ್ದ ಕಡೆಯಲ್ಲಿ ಈ ಸಿಬ್ಬಂದಿಯು ದುರಸ್ತಿ

ಮತ್ತು ಮೇಲುಸ್ತುವಾರಿ ಕೆಲಸದಲ್ಲಿ ಮಗ್ಗುಲಾಗಿರಲಿಲ್ಲ. ಕೆಲವು ಕೈಗಾರಿಕಾ ತರಬೇತಿ ಸಂಸ್ಥೆಗಳಲ್ಲಿ ದುರಸ್ತಿ ಮತ್ತು ಮೇಲುಸ್ತುವಾರಿ ಸಿಬ್ಬಂದಿಯು ಕೂರತೆ ಇತ್ತು ಎಂದು ತಿಳಿದುಬಂದಿದೆ. ಮೆಕ್ಯಾನಿಕಲ್ ಓವರಹಾಲಿಂಗ್ ಭಾಗಗಳನ್ನು ಇಟ್ಟುಕೊಳ್ಳುವುದು, ಸಣ್ಣ ದುರಸ್ತಿ ಕೆಲಸಗಳನ್ನು ಈ ಸಿಬ್ಬಂದಿಯು ನೋಡಿಕೊಳ್ಳುತ್ತಿರುತ್ತಾರೆ. 2 ಸಂಸ್ಥೆಗಳಲ್ಲಿ ಯಂತ್ರಗಳ ದುರಸ್ತಿ ಕೆಲವು ತಿಂಗಳಿಗೊಮ್ಮೆ ಮಾಡಬೇಕಾಗಿತ್ತು. ಯಂತ್ರಗಳ ಮೇಲುಸ್ತುವಾರಿ ಮತ್ತು ದುರಸ್ತಿ ಕೆಲಸ ಪ್ರತ್ಯೇಕ ಸಿಬ್ಬಂದಿ ಇಲ್ಲದ ಸಂಸ್ಥೆಗಳಲ್ಲಿ ಬೋಧಕ ಸಿಬ್ಬಂದಿಯು ಗಮನಿಸುತ್ತಾರೆಂದು ತಿಳಿದು ಬಂದಿದೆ. ಈ ಸಿಬ್ಬಂದಿಯು ಯಂತ್ರಗಳ ದುರಸ್ತಿ ಮತ್ತು ಮೇಲುಸ್ತುವಾರಿ ಕೆಲಸದಲ್ಲಿ ಸಂಪೂರ್ಣವಾಗಿ ತರಬೇತಿ ಹೊಂದಿಲ್ಲ. ಹಾಗೂ ಸರಾಸರಿ ದಿನಕ್ಕೆ ಒಂದು ಗಂಟೆ ಈ ಕೆಲಸದಲ್ಲಿ ತೊಡಗಿದ್ದರು.

4) ಯಂತ್ರಗಳ ದುರಸ್ತಿ ಮತ್ತು ಖರೀದಿಗೆ ವಿನಿಯೋಗಿಸಿದ ಹಣ :-

ಹೊಸ ಉಪಕರಣಗಳ ಮತ್ತು ಯಂತ್ರಗಳ ಖರೀದಿಗಾಗಿ ಸರ್ಕಾರಿ ತರಬೇತಿ ಸಂಸ್ಥೆಗಳ ಒಟ್ಟಾರೆ ಖರ್ಚಿನಲ್ಲಿ 1982-83ರಲ್ಲಿ ಶೇಕಡ 1 ಕ್ಕಿಂತ ಕಡಿಮೆ ಖರ್ಚು ಮಾಡಿದೆ. ಯಂತ್ರಗಳ ದುರಸ್ತಿಗಾಗಿ ಶೇಕಡಾ 0.5ಕ್ಕಿಂತ ಕಡಿಮೆ ಖರ್ಚು ಮಾಡಲಾಗಿದೆ. ಒಟ್ಟಾರೆ ಹೆಚ್ಚು ಖರ್ಚು ನೌಕರವರ್ಗದ ಸಂಬಳಕ್ಕೆ ಆಗಿದೆ. ಮಂಜೂರಾತಿಯನ್ನು ತೆಗೆದುಕೊಳ್ಳುವಲ್ಲಿ ವಿಳಂಬ, ಹಣದ ಕೊರತೆ, ಮತ್ತು ಬಿಡಿ ಭಾಗಗಳು ಲಭ್ಯವಿಲ್ಲದೆ ಇರುವುದು ಕೈಗಾರಿಕಾ ತರಬೇತಿ ಸಂಸ್ಥೆಯಲ್ಲಿನ ಮುಖ್ಯ ತೊಂದರೆಗಳು.

5) ಬೋಧಕ ಮತ್ತು ತರಬೇತಿ ಸಿಬ್ಬಂದಿ ವರ್ಗ :-

371 ಮಂಜೂರಾದ ಬೋಧಕ ಮತ್ತು ತರಬೇತಿ ಸಿಬ್ಬಂದಿ ಹುದ್ದೆಗಳಿದ್ದವು. ಅವುಗಳಲ್ಲಿ 337ನು ತುಂಬಲಾಗಿದೆ. ಎಲೆಕ್ಟ್ರೀಷಿಯನ್, ಮೆಷಿನ್‌ಮನ್, ಪಿಟ್ರರ್, ಟರ್ನರ್ ಹಾಗೂ ಗಣಿತ ಬೋಧಕರುಗಳಲ್ಲಿ ಕೆಲ ಹುದ್ದೆಗಳನ್ನು ತುಂಬಿರಲಿಲ್ಲ. ಹಾಗೆಯೇ ಇನ್‌ಸ್ಟ್ರಕ್ಟರ್ ಹುದ್ದೆಯಲ್ಲಿ ಕ್ಯಾಲಕುಲೇಷನ್ ವಿಜ್ಞಾನ, ಇಂಜಿನಿಯರಿಂಗ್ ಮತ್ತು ಡ್ರಾಯಿಂಗ್‌ನಲ್ಲಿ ಹುದ್ದೆಗಳು ಖಾಲಿ ಇದ್ದವು. ಕೆಲವು ಇನ್‌ಸ್ಟ್ರಕ್ಟರ್‌ಗಳು ಬೇಸಿಕ್ ತರಬೇತಿ ಹೊಂದಬೇಕಿತ್ತು. ಇದಲ್ಲದೆ, ಅನೇಕ ಬೋಧಕರು ರಿಪ್ರೀವಿಂಗ್ ತರಬೇತಿಯನ್ನು ಹೊಂದಿರಲಿಲ್ಲ.

6) ಕಟ್ಟಡ ಸೌಕರ್ಯ :- 19 ಸಂಸ್ಥೆಗಳಲ್ಲಿ 14ಕ್ಕೆ ಸ್ವಂತ ಕಟ್ಟಡ ಇತ್ತು. 5 ಸಂಸ್ಥೆಗಳು ಬಾಡಿಗೆ ಕಟ್ಟಡದಲ್ಲಿದ್ದವು. 7 ಸಂಸ್ಥೆಗಳಿಗೆ ಹೆಚ್ಚುವರಿ ಕಟ್ಟಡದ ಸೌಕರ್ಯ ಬೇಕಿತ್ತು.

7) ಗ್ರಂಥಾಲಯ ಸೌಕರ್ಯಗಳು :- 17 ಕೈಗಾರಿಕಾ ತರಬೇತಿ ಸಂಸ್ಥೆಗಳಿಗೆ ಸುಸಜ್ಜಿತ ಗ್ರಂಥಾಲಯ ಸೌಕರ್ಯ ಇತ್ತು.

8) ಬೋಧಕರ ಚಟುವಟಿಕೆಗಳು :-

17 ಸಂಸ್ಥೆಗಳಲ್ಲಿ ಒಳಾಂಗಣ ಕ್ರೀಡಾಂಗಣ ಸೌಕರ್ಯ ಇತ್ತು. 17 ಸಂಸ್ಥೆಗಳಲ್ಲಿ ಉಪ ವೈದ್ಯಾಧಿಕಾರಿ ಇತ್ತು. ಉಳಿತಾಯ ಬೆಳಕಾದ ಉಪಕರಣಗಳು ಮತ್ತು ಹಣ 17 ಸಂಸ್ಥೆಗಳಲ್ಲಿ ಲಭ್ಯವಿತ್ತು. 2 ಸಂಸ್ಥೆಗಳಲ್ಲಿ ಸಂಸ್ಥೆಯ ಅಧಿಕಾರಿಗಳು ಕ್ರೀಡಾ ಚಟುವಟಿಕೆಯನ್ನು ಸಹ ನೋಡಿಕೊಳ್ಳುತ್ತಿದ್ದರು.

9) ವಿವಿಧ ವಸತಿ ಗೃಹದ ಸೌಕರ್ಯ :-

3 ಕೈಗಾರಿಕಾ ತರಬೇತಿ ಸಂಸ್ಥೆಗಳಲ್ಲಿ ಸ್ವಂತ ವಸತಿ ಗೃಹದ ಸೌಕರ್ಯವಿತ್ತು. ಒಂದು ಸಂಸ್ಥೆಯಲ್ಲಿ ಖಾಸಗಿ ವಸತಿ ಸೌಕರ್ಯವಿತ್ತು.

10) ಅಧ್ಯಯನದ ಶಿಫಾರಸ್ಸುಗಳು :-

ಮೇಲ್ಕಂಡಿರುವ ಅಂಶಗಳನ್ನು ಗಮನದಲ್ಲಿಟ್ಟುಕೊಂಡು ಅಧ್ಯಯನವು ಕೆಳಕಂಡ ಶಿಫಾರಸ್ಸುಗಳನ್ನು ಮಾಡಿದೆ.

- 1) ಕೈಗಾರಿಕಾ ತರಬೇತಿ ಸಂಸ್ಥೆಗಳಲ್ಲಿ ಲಭ್ಯವಿರತಕ್ಕ ಉಪಕರಣಗಳು ಮತ್ತು ಯಂತ್ರಗಳ ಸ್ಥಿತಿಯನ್ನು ಪರಿಶೀಲಿಸಿ ಸೂಕ್ತ ಶಿಫಾರಸ್ಸು ಮಾಡಲು ಒಂದು ತಜ್ಞರ ಸಮಿತಿಯನ್ನು ನೇಮಿಸಬೇಕು. ಈ ಸಮಿತಿಯು ಸಂಸ್ಥೆಗಳ ಒಟ್ಟಾರೆ ಇಂಟೆಲಿಜೆನ್ಸ್ ಹೆಚ್ಚುವರಿಯಾಗಿ ಮತ್ತು ಉಪಕರಣಗಳನ್ನು ಕೈ ಬಿಟ್ಟು ಹೊಸದಾಗಿ ಖರೀದಿಸಬೇಕಾದ ಉಪಕರಣಗಳ ಮತ್ತು ಯಂತ್ರಗಳ ಸಂಖ್ಯೆ ಮತ್ತು ಹೊಸದಾಗಿ ಖರೀದಿಸಬೇಕಾದ ಉಪಕರಣಗಳು ಮತ್ತು ಯಂತ್ರಗಳ ಸಂಖ್ಯೆಯನ್ನು ಗಮನದಲ್ಲಿಟ್ಟುಕೊಂಡು ತನ್ನ ಶಿಫಾರಸ್ಸುಗಳನ್ನು ಮಾಡಬೇಕು.
- 2) ಕೈಗಾರಿಕಾ ತರಬೇತಿ ಸಂಸ್ಥೆಗಳ ಪ್ರಾಂಶುಪಾಲರಿಗೆ ಹೆಚ್ಚಿನ ಅಧಿಕಾರವನ್ನು ವಿಸ್ತರಿಸುವುದು.
- 3) ಹೊಸ ಯಂತ್ರಗಳ ಖರೀದಿ ಮತ್ತು ದುರಸ್ತಿಗಾಗಿ ಇಲಾಖೆಗೆ ಒಟ್ಟಾರೆ ಆಯವ್ಯಯದಲ್ಲಿ ಶೇಕಡಾ 20ರಷ್ಟು ಗೊತ್ತುಪಡಿಸಬೇಕು.
- 4) ಉಪಕರಣ ಮತ್ತು ಯಂತ್ರಗಳ ಖರೀದಿಗಾಗಿ ಕೇಂದ್ರೀಕೃತ ಖರೀದಿ ಕ್ರಮವನ್ನು ಅನುಸರಿಸುವುದು.
- 5) ಯಂತ್ರಗಳ ಮೇಲಿನ ಸ್ವಾಮ್ಯ, ದುರಸ್ತಿ ಮತ್ತು ಅವುಗಳನ್ನು ನೋಡಿಕೊಳ್ಳಲು ಒಂದು ವಿಶೇಷ ಸಾಕ್ಷಿ ರಚಿಸಬೇಕು. ಈ ಸಾಕ್ಷಿ ಹಾಲಿ ಲಭ್ಯವಿರತಕ್ಕ ಜನಶಕ್ತಿಯನ್ನು ಬಳಸಿಕೊಳ್ಳಬೇಕು. ಈ ಸಾಕ್ಷಿ ವಿವಿಧ ಕೈಗಾರಿಕಾ ಸಂಸ್ಥೆಗಳಿಗೆ ಬೇಕಿ ಕೊಟ್ಟು (ಕೋಲರಿಕೆ ಮೇರೆಗೆ) ಯಂತ್ರಗಳ ದುರಸ್ತಿ ಕೆಲಸವನ್ನು ನೋಡಿಕೊಳ್ಳತಕ್ಕದ್ದು.
- 6) ಕೈಗಾರಿಕಾ ತರಬೇತಿ ಸಂಸ್ಥೆಗಳ ಕಟ್ಟಡಗಳನ್ನು ಕಟ್ಟಲು ವಿಶೇಷ ಕಾರ್ಯಕ್ರಮ ಕೈಗೆತ್ತಿಕೊಳ್ಳಬೇಕು.
- 7) ವಿವಿಧ ವಸತಿ ನಿಲಯಗಳನ್ನು ಕೈಗಾರಿಕಾ ತರಬೇತಿ ಸಂಸ್ಥೆಯು ಹೊಂದಲು ಸೂಕ್ತ ವ್ಯವಸ್ಥೆ ಮಾಡತಕ್ಕದ್ದು.

11) ಶಿಫಾರಸ್ಸುಗಳ ಮೇಲೆ ತೆಗೆದುಕೊಂಡ ಕ್ರಮ :-

ಈ ವರದಿಯು ಶಿಫಾರಸ್ಸುಗಳನ್ನು ಗಮನವಲ್ಲಿಟ್ಟುಕೊಂಡು ತೆಗೆದುಕೊಂಡ ಕ್ರಮಗಳು :-

- 1) ಕೈಗಾರಿಕಾ ತರಬೇತಿ ಸಂಸ್ಥೆಗಳಲ್ಲಿ ಇರತಕ್ಕ ಯಂತ್ರ ಮತ್ತು ಉಪಕರಣಗಳ ವಿಸ್ತೀರ್ಣವನ್ನು ಪರಿಶೀಲಿಸಲು ಹಾಗೂ ಸೂಕ್ತ ಶಿಫಾರಸ್ಸು ಮಾಡಲು ತಜ್ಞರ ಸಮಿತಿಯನ್ನು ನೇಮಿಸಲಾಗಿದೆ.
- 2) ಪ್ರಾಂಶುಪಾಲರಿಗೆ ಸೂಕ್ತ ಅಧಿಕಾರವನ್ನು ವಿಸ್ತೀರ್ಣಿಸಲು ಕ್ರಮವನ್ನು ತೆಗೆದುಕೊಳ್ಳಲಾಗುತ್ತಿದೆ.
- 3) ಹೊಸ ಯಂತ್ರಗಳ ಮತ್ತು ಉಪಕರಣಗಳ ಖರೀದಿಯಲ್ಲಿ ಮತ್ತು ದುರಸ್ತಿಗಾಗಿ ಹೆಚ್ಚುವರಿ ಹಣವನ್ನು ಕೊಡಲು ನಿರ್ದೇಶಿಸಲಾಗಿದೆ.
- 4) ಕೇಂದ್ರೀಕೃತ ಖರೀದಿಯ ವ್ಯವಸ್ಥೆಯನ್ನು ಒಟ್ಟಾರೆ ಅನುಷ್ಠಾನಕ್ಕೆ ತರಲಾಗಿದೆ.
- 5) ಯಂತ್ರಗಳ ದುರಸ್ತಿ ಮತ್ತು ಮೇಲುಸ್ತುವಾರಿಗಾಗಿ ಒಂದು ವಿಶೇಷ ಸಾಫ್ಟ್ ರಜಿಸಲರು ಕ್ರಮವನ್ನು ರೂಪಿಸಲಾಗುತ್ತಿದೆ.
- 6) ಕೈಗಾರಿಕಾ ತರಬೇತಿ ಸಂಸ್ಥೆಗೆ ಕಟ್ಟಡ ಕಟ್ಟಲು ಸೂಕ್ತ ವ್ಯವಸ್ಥೆಯನ್ನು ಮಾಡಲು ಯೋಜನೆಯೊಂದನ್ನು ರೂಪಿಸಲಾಗುತ್ತಿದೆ.



STUDY OF DEFICIENCIES OF TRAINING INFRASTRUCTURE IN THE STATE

FOR TRAINING IN VOCATIONAL TRADES

1. INTRODUCTION:

A request was received from the Department of Employment and Training in September 1982 to undertake a detailed study on the deficiency of training infrastructure in the State for training in vocational trades visa-vis integrated rural development for enlarging scope for vocational training in the State. Consequent to this request detailed discussions were held with the officers of the Department of Employment and Training. As a result of these discussions, the scope of the study was defined as; (1) to ascertain the availability and deficiencies of various equipments and machines for different trades in the Government run I.T.Is., (2) to ascertain utilisation of the available equipments and machines, details about machines out of use due to improvements in technology, machines and equipments which are not repairable, number of machines requiring replacements, etc., (3) to ascertain the availability of facilities for repairs and maintenance of equipments, personnel attending to repairs and maintenance, expenditure incurred on repairs and maintenance, etc., (4) to ascertain the availability of other infrastructure facilities like buildings for the Institutions, Hostel facilities, facilities for extra curricular activities, etc.,

A proforma was designed and discussed with the officers of the Directorate of Employment and Training, information was obtained from different I.T.Is, and analysed. The results of the analysis are given below:-

2. AVAILABILITY OF EQUIPMENTS:

To ensure minimum availability of machinery and equipments for imparting training, the Directorate General of Employment and Training

have fixed certain minimum norms for supply of machinery required trade wise for imparting training (details are given in Annexure-I). These norms cover only major equipments and tools. Keeping these norms as the yardstick, an analysis of the information received indicates; (1) the norms of supply is not adhered to strictly, (2) norms have not been prescribed for trades like pattern maker, Cutting and Tailoring, Stenography, Sheet Metal Cutter, Wireman, Electro Plater, Instrument Mechanic and Draftsman (civil), (3) no uniform pattern has been followed in the supply of equipments and machines, (4) certain equipments have not been supplied to the Industrial Training Institutes(the list of equipments not supplied is given in Annexure-II), (5) a number of machines and equipments require repairs particularly in the trades such as Draftsman, Mechanic, Turner, Electrician, Mechanical(General), Electronics and Machines (6) a few machines have been rendered outmoded due to changes in technology particularly in Fitter and Machinist trades, (7) certain machines like Lathes, Drilling Machines, etc., are used for imparting training in more than one trade.

3. REQUIREMENTS OF MACHINES AND EQUIPMENTS:

Industrial Training Institutes were requested to give the requirements of equipments and machines tradewise along with reasons for requirements. The reasons for additional requirements are (1) present availability being insufficient, equipments and machines being out of order, changes in technology, increase in the Students strength, shortages in supply compared to requirements. In many trades, there has been a short supply of machines and equipments. This is so in trades like fitter, Draftsman, Mechanic, Machinist, Refrigeration and Airconditioning, Electrician, Motor Vehicle training. Certain equipments are to be supplied due to changes in the technology (a list of equipments to be supplied is given in Annexure-III).

An analysis of reasons for machines remaining idle shows that there was lack of supply of electricity, want of accommodation, lack of supply of spare parts and want of spare parts. In case of Blue Printing Machine, it has not been used because it has become outmoded.

4. MAINTENANCE AND REPAIRS FACILITIES:

13 Institutes had no facilities like workshops for maintenance and repairs. Similarly, 13 Institutes had no training facilities in maintenance and repairs. In the Institutes where exclusive staff were available for maintenance and repairs work, it is reported that these staff were fully engaged during the year. Some institutes have reported inadequacy of staff for this work. Works like Mechanical overhauling, maintenance of parts and minor repairs have been attended to. In 2 institutes, the frequency of repairs is reported as once in a month. In institutes where no exclusive staff are available for repairs, it is reported that minor repairs are attended to by the Teaching Staff. These personnel are not fully trained in maintenance and repairs work. They have spent on an average an hour per day on maintenance and repairs work.

5. ALLOCATION OF FUNDS FOR NEW PURCHASE OF EQUIPMENTS AND REPAIRS:

The Principals of Industrial Training Institutes were requested to state whether they had adequate allocation of funds for purchase of equipments and repairs. 11 Principals have reported that they had sufficient funds and 2 have stated that the funds were inadequate and the rest have not stated their views. It is ascertained that funds are not exclusively allotted to the Industrial Training Institutes. The expenditure is met from the training grants as and when the need arises. The principal is vested with powers for undertaking repairs and overhauling of tools and equipments at a rate of Rs 500/- each time with a total expenditure of Rs 5000/- per year. Even in the Head Office, the details of allotment were not available,

The Department has furnished details of expenditure incurred for purchase of new equipments from 76-77 to 82-83. Since it was not possible to get total expenditure for each I.T.I, the information furnished in the Budget volumes for the year 1980-81, 1981-82 and 1982-83 has been taken into account. On an analysis of expenditure incurred for purchase of new equipments it is noticed that less than 0.5 percent of the expenditure incurred is on repairs and less than 1% incurred is on purchase of new equipments in 1982-83. The major expenditure is incurred as salaries etc., Delay in getting sanctions, shortage of funds and non availability of specific items are some of the difficulties faced by the I.T.Is.

6. TEACHING AND TRAINING STAFF:

As against a sanctioned strength of 371 posts, 337 posts had been filled up under various trades. In the Electrician, Machinist, Fitter, Turner and Teachers in Mathematics, some posts have not been filled up. Similarly, posts of instructors in workshop calculation and Science and Engineering drawing have remained vacant. Out of 83 posts sanctioned for teaching general subjects, 56 persons are in position. Some of the instructors are yet to undergo basic training. Apart from this, many of the instructors have not undergone refresher training.

7. BUILDING FACILITIES:

14 out of 19 institutions have their own buildings. 5 institutions are located in rented buildings, 7 I.T.Is. require additional accommodation.

8. LIBRARY FACILITIES:

17 I.T.Is. are equipped with libraries. 2 institutes have not furnished any information.

9. EXTRA CURRICULAR ACTIVITIES:

Information on extra curricular activities in the institutes and the availability of facilities was collected from different institutes. 18 institutions had facilities for indoor games, 17 had fields for out-door games. Equipments and funds for extra curricular activities were available in 17 institutes, 2 institutes^s had officials to look after sports activities. In all, 17 institutes had the facilities fully utilised.

10. HOSTEL FACILITIES:

3 I.T.Is. had their own hostel facilities and one I.T.I. had private hostel facilities. The views of the principals of the institutes on the existing infrastructure facilities available, deficiencies according to them, changes needed, are given in Annexure-IV.

R E C O M M E N D A T I O N S

(1) An expert Group may be constituted to review the availability of equipments needed in different I.T.Is. and the number of such equipments needed. This should be based on the Intake capacity, number of machines to be replaced and number to be purchased additionally in each institute.

(2) There is need to delegate powers to Principals for undertaking small repairs and replacements with funds being kept at their disposal. The present limit of Rs.5,000/- per annum for repairs requires revision. This limit may have to be fixed keeping in view the number of trades taught.

(3) In the present pattern of expenditure, adequate funds are not being spent on purchase of new machines, replacements and maintenance and repairs. It is necessary that atleast 20% of the total budget is earmarked for purchase of new machinery and equipments, replacements of old ones and maintenance of the existing ones.

(4) The introduction of Centralised Purchase of machinery and equipments at the Head Office after obtaining the indents from the various institutes could be considered to avoid delays and bottleneck in the purchases.

(5) The creation of a special squad for maintenance and repairs for a group of institutes to regularly attend to equipments and machinery could be considered by redeploying the existing manpower in the department. This special squad could go round various institutes on request from the concerned principals and attend to maintenance and repairs of the equipments.

(6) Building facilities have to be given to I.T.Is. where buildings are not there in a phased manner.

(7) Arrangements for having hostels in I.T.Is. could be taken up in a phased manner.

NOTE ON ACTION TAKEN OR ACTION PROPOSED TO BE TAKEN ON THE
RECOMMENDATIONS OF THE REPORT ON DEFICIENCIES IN INFRASTR-
UCTURAL FACILITIES IN THE INDUSTRIAL TRAINING INSTITUTES
IN KARNATAKA

RECOMMENDATION

ACTION TAKEN OR ACTION TO BE TAKEN

An expert group may be constituted to review the availability of equipments in the different ITIs and the number of such equipments needed. This should be based on the intake capacity, number of machines to be replaced and number to be purchased additionally in each institute.

1. An expert committee consisting of Director of Employment & Training as Chairman, Director, Foreman Training Institute or his nominee, Shri.N.Kannan, Works Engineer, G.K.W.Rajajinagar, Bangalore and the principal of the concerned Institute(I.T.I) Deputy Director, Training, has been constituted in June 1984 as per the recommendations of the Economic and Planning Council with the following functions:-
 - (a) Fix the life of each machinery available in Industrial Training Institute
 - (b) prescribe standards and norms for replacement of machinery
 - (c) provide standard machinery required to carry out training programmes effectively as per N.C.V.T.
 - (d) Dispose off the obsolete and irreparable machinery and equipment available in Industrial Training Institutes. Since this recommendation is covered under the functions of this committee, the committee has been requested to complete its work within 4 weeks and give its recommendations

2. There is need to delegate powers to principals for undertaking small repairs and replacements with funds being kept at their disposal. The present limit of Rs.5,000/- per annum for repairs requires revision. This limit may have to be fixed keeping in view the number of trades taught
3. In the present pattern of expenditure, adequate funds are not being spent on purchase of new machines, replacement and maintenance of repairs. It is necessary that atleast 20% of the total budget is earmarked for purchase of new machinery and equipments, replacement of old ones and maintenance of the existing ones.
4. The introduction of centralised purchase of machinery and equipments at the Head Office after obtaining indent from the various institutes could be considered to avoid any bottlenecks in purchases.
5. The creation of a special squad for maintenance and repairs for a group of institutes to regularly attend to the equipments and machinery could be considered by redeploying the existing manpower in the Department. The special squad could go round various institutes on request from the concerned Principals and attend to maintenance and repairs of the equipments.
2. Necessary orders of Government delegating powers to the principals is expected to be issued shortly.
3. It has been decided to provide more money for expenditure on replacement of new machinery. Apart from this a decision has been taken to explore the possibilities of getting funds from Govt. of India for replacement of old machinery on 50:50 share basis.
4. Centralised purchase is being resorted to except for purchase of raw materials and small tools to be purchased by the Principals in accordance with the delegation of powers.
5. A proposal for creation of a maintenance squad without a van at a cost of Rs.2.00 to Rs.2.2 lakhs is being formulated by the Directorate of Employment and Training. Apart from this the possibilities of encouraging one or two Engineers or retired officials of the Directorate to take up self employment with the Bank assistance to carry out repairs and maintenance to

machinery and equipments, on the guarantee that all repairs and maintenance of equipments and machinery of the Industrial Training Institutes will be entrusted to only these self employed persons is being formulated.

Building facilities have to be given to Industrial Training Institutes where buildings are not there in a phased manner.

6. A decision has been taken to explore the possibilities of obtaining bank finance for this purpose, with the provision for repayment being made within the budget of the Department every year. Steps are being taken to have a project report ready to pose the same before the banks for financing.

Arrangements for having hostels in Industrial Training Institutes could be taken up in a phased manner.

7. The importance of providing hostel facilities has been appreciated. Efforts will be made to provide hostel facilities after funds become available.

LIST OF ANNEXURES

- ANNEXURE I TRADEWISE NO.OF MACHINES REQUIRED FOR IMPARTING TRAINING IN ITI_s AS PER THE NORMS PRESCRIBED.
- ANNEXURE II LIST OF EQUIPMENTS NOT SUPPLIED
- ANNEXURE III LIST OF EQUIPMENTS TO BE SUPPLIED DUE TO CHANGE IN TECHNOLOGY
- ANNEXURE IV REMARKS OF PRINCIPALS
- ANNEXURE V (1) DISTRIBUTION OF ITI_s ACCORDING TO YEAR OF ESTABLISHMENT AND THEIR INTAKE CAPACITY
- ANNEXURE V (2) DISTRIBUTION OF ITI_s ACCORDING TO TRADE AND YEAR OF ESTABLISHMENT AND THEIR INTAKE CAPACITY
- ANNEXURE V (3) NO.OF INSTRUCTORS POSTS SANCTIONED, NO. IN POSITION ACCORDING TO TRADES
- ANNEXURE V (4) NO.OF MACHINES/EQUIPMENTS REQUIRED, SUPPLIED AND CONDITIONS OF MACHINES IN EACH TRADE
- ANNEXURE V (5) NO.OF MACHINES KEPT IDLE EVEN THOUGH IN WORKING CONDITION ACCORDING TO DIFFERENT REASONS
- ANNEXURE V (6) NO.OF ADDITIONAL MACHINES/EQUIPMENTS REQUIRED BY ITI_s ACCORDING TO DIFFERENT TRADES
- ANNEXURE V (7) TOTAL ALLOTMENT, EXPENDITURE ON DIFFERENT ITEMS IN ITI_s OF KARNATAKA
- ANNEXURE V (8) EXPENDITURE INCURRED FOR PURCHASE OF NEW EQUIPMENTS FOR VARIOUS ITI_s FROM 1970-71 to 1982-83
- ANNEXURE V (9) AVAILABILITY OF TEACHERS FOR TEACHING GENERAL SUBJECTS
- ANNEXURE V (10) PARTICULARS OF FACILITIES LIKE BUILDING, LIBRARY SPORTS AND HOSTELS
- ANNEXURE VI (1) REPAIRS AND MAINTENANCE OF MACHINERY AND EQUIPMENTS
- ANNEXURE VI (2) ITI WISE DETAILS OF WORK ATTENDED TO BY THE STAFF EXCLUSIVELY AVAILABLE FOR REPAIRS
- ANNEXURE VI (3) ITI WISE DETAILS OF INSTRUCTORS WHO ATTENDED TO REPAIRS/MAINTENANCE OF EQUIPMENT ALONG WITH THEIR USUAL WORK
- ANNEXURE VI (4) AVAILABILITY OF FUNDS FOR PURCHASE/REPAIRS OF EQUIPMENTS.

Annexure - I
TRADEWISE NO.OF MACHINES REQUIRED FOR IMPARTING TRAINING
IN ITI'S AS PER THE NORMS PRESCRIBED.

Name of the Trade.	No.of Machines required as per the norms prescribed.	Remarks
1	2	3

I. D'MAN MECHANIC.

- | | | |
|---|--------|--|
| 1. Pentograph Brass 24" | 1 No. | |
| 2. Planimeter Sliding Bar
Pattern max 28" | 1 No. | |
| 3. Drafting Machine - 42"x29"
complete with accessories. | 2 Nos. | |

II. ELECTRICIAN.

- | | | |
|--|-------|--|
| 1. Motor Generator Set consisting of
Motor inductions squirrel cage 5 HP.
400 Volts and 50 Cycles, 8 phase,
with star delta starter and switch
directly coupled to D.C.Shunt gener-
ator 3 K.W.420 Volts and Switch Board
mounted with regulator, air circuit
breaker, ammeter, Voltmeter, knife
blade switches and fuses, set complete
with cast iron bed/plate fixing bolts,
foundation bolts and flexible coupling. | 1 No. | |
| 2. Motor Series D.C. 220 Volt 2 to 3 HP | 1 No. | |
| 3. Motor Shunt D.C.,220 Volt 2 to 3 HP | 1 No. | |
| 4. Motor A.C.Squirrel Cage 3 Phase 400
Volts 50 Cycles 2 to 3 HP.with
star-delta starter and triple pole
iron clad switch fuse. | 1 No. | |
| 5. Tungar rectifier 15 Volt | 1 No. | |
| 6. Motor A.C.Phase wound slip ring type
5. H.P 400 Volts 3 Phase.50 Cycles
with starter and switch | 1 No. | |
| 7. Motor A.C.Single phase 230 Volts/1 HP
repulsion type, complete with starter
switch | 1 No. | |
| 8. Current transformer smallest range
available | 1 No. | |
| 9. Potential transformer smallest range
available. | 1 No. | |
| 10. Used D.C.Generators-series,shunt and
compound types for overhauling practice. | 1 No. | |
| 11. D.C.Shunt Generator 2.5 K.W. 220 V with
control panel. | 1 No. | |
| 12. D.C.Compound generator, 2.5 K.W. 250 V.
with control panel including fieldrhostat
voltmeter,ammeter and Circuit breaker. | 1 No. | |

13. Motor Generator Set consisting of Motor Shunt 5 HP. 440 Volts with starting compensator and switch directly coupled to generator A.C. 3.5 KVA. 400/230 Volts 3 Phase 4 Wire, 0.8 P.F. 50 cycle with exciter and switch board mounted with regulator circuit breaker, ammeters, voltmeters frequency meter, knife blade w switch and fuses etc., set complete with cast iron bed plate, fixing bolts, foundation bolts and flexible coupling.

14. Mock lay out car wiring consisting of:

Dynamo	...1
Starter.	...1
Cut Out	...1
Switch ignition	...1
Switch Starter.	...1
Switch dipper	...1
Solenoid.	...1
Fuse box.	...1
Head lights pair	...1
Side Lights pair.	...1
Tail Light	...1
Tail Ammeter.	...1
Ignition coil.	...1
Condensor.	...1
Distributor.	...1
Plug sparking set of 4 to 6	...1
Horn electric	...1
Wiper, wind screen switch, horn Electric	
Switch Wiper Wind Screen.	
Bench 2.5 Meters x 1.5 Meters x 1 Meter.	

(The equipment for Mock layout need not be provided where Motor Mechanic Section exists).

15. Motor Generator Set consisting of:

Motor induction squirrel cage. 7 HP. 400 Volts, 50 cycles 3 phase with star-delta starter and switch directly coupled to D.C. Shunt generator 5 K.W. 440 Volts, and switch board mounted with regulator, air circuit breaker, ammeter, Voltmeter knife blade switches and fuses, set complete with cast iron bed plate, fixing bolts, foundation bolts and flexible coupling.

16. Motor Generator set consisting of:

Motor shunt 5 HP. 440 Volts with starting compensator and switch directly coupled to generator A.C. 3.5 KVA 400/230 Volts 3 Phase 4 wire. 0.8 P.F. 50 Cycle with exciter and switch board mounted with regulator, circuit breaker, ammeter, voltmeter, frequency meter, knife blade switch and fuses etc., Set complete with cast iron bed plate, fixing bolts, foundation bolts & flexible coupling.

17. Motor series D.C. 220 Volt 2 to 3 HP .. 1 No.
18. Motor Shunt D.C. 220 Volt 2 to 3 HP .. 1 No.
19. Motor, A.C.Squirrel cage, 3 Phase
400 Volt 50 cycles 2 to 3 HP with
start-delta starter & triple pole iron
clad switch fuse. .. 1 No.
20. Tungen rectifier 15 Volt. .. 1 No.
21. Motor A.C.Phase - wound slipring type
5 H.P 400 Volts, 3 Phase. 50 cycles
with starter and switch. .. 1 No.
22. Motor A.C. Auto-synchronous, smallest
unit available with starter. .. 1 No.
23. Motor D.C. compound -wound 220 Volt -
2 to 3 HP with starter and switch .. 1 No.
24. Motor A.C.Single phase 230 Volt.
1 HP repulsion type complete with
starter and switch. .. 1 No.
25. Motor A.C.Single Phase 230 Volts.
50 cycles series type with starter/
switch 1 HP. .. 1 No.
26. Motor A.C. Single phase 230 Volts.
50 cycles capacitor type with
starter/switch 1 HP. .. 1 No.
27. Motor Universal 230 Volt. 50 Cycles
with starter/switch 1 HP. .. 1 No.
28. Rotary convertor 5 KVA.400 volts,
3 phase 50 cycles. A.C. to D.C. 440 V.
3 wire with accessories. .. 1 No.
29. Transformer single phase.3 KVA 400/230 V.
50 cycles, core type, air cooled. .. 1 No.
30. Transformer three phase 5 KVA.400/230 V.
50 cycles H.T.delta and L.T.Star Shell
type, oil cooled. .. 2 Nos.
31. Current transformer .. 1 No.
32. Potential transformer .. 1 No.
33. Used D.C.Generator-series, shunt and
compound type for overhauling practice. .. 1 each.
34. D.C.Shunt Generator 2.5 K.W 220 V with
control panel. .. 1 No.
35. D.C.Compound generator 2.5 KW 250 V.with
control panel including field rehostat,
Volt-meter, Ammeter and circuit breaker. .. 1 No.

	1	2	3	4
<u>III</u> <u>FITTER</u>		Drilling Machine Pillor sensitive 0-20 mm cap. with swivel table motorised with chuck and key.	1 No	
		2. Drilling machine bench sensitive 0-12 mm cap. motorised with chuck and key.	2 Nos.	
		3. Forge portable hard blower 38 cms to 45 cms.	1 Nos.	
		4. Grinding machine (General purpose) D.E. Pedestal with 17 mm dia wheel rough and smooth with twist drill grinding attachments.	1 Nos.	
<u>IV.</u> <u>TURNER.</u>		1. Lathe, general purpose S.S.S.C. 135cm bed 15 cm. height of centre-motorised (cone-pulley lathe may be obtained)	7 Nos	
		2. Lathe general purpose S.S.C. all geared head-stocks 180 cms, bed z 162 mm height of centre, motorised.	4 Nos	
		3. Lathe general purpose S.S.C. gap bed 180cm x 212 cm height of centre - motorised (cone pulley lathe may be obtained).	2 Nos	
		4. Power drill pillar type 19 mm motorised	1 No	
		5. Grinder D.E. Pedestal type 175 mm wheel dia. rough and smooth with twist drill grinding attachment.	1 No	
		6. Lathe Capstan spindle bore 20 mm. swing over bed 250 mm with all accessories.	1 No	
		7. Lathe Turret Spindle bore 25 mm. swing over bed 250 mm with 12 spindle speeds with all accessories.	1 No	
<u>V.</u> <u>PLUMBER</u>		1. Electric Pump 1 HP		
		2. D.E. Pedestal Grinder with 2 wheels 175 mm rough and smooth		
<u>VI.</u> <u>GENERAL</u> <u>ELECTRONICS.</u>		Grinder, Bench double ended, 15 cm rough and fine wheels. motorised.	1 No.	
		2. Drilling machine, pillar type, 2 cm. capacity motorised.	1 No.	
		3. Lathe sliding, surfacing and screw cutting bed length 140 cm motorised, complete with accessories and taper turning attachment.	1 No	
		4. Motor series, DC 220 volts 2-3 HP with pony brake.	1 Unit.	
		5. Motor Shunt D.C. -do-	- do -	
		6. Motor Compound Wound D.C. -do-	- do -	
		7. Motor, A.C. Squirrel cage, 3 phase 400 volts, 50 cycles, 2-3 HP. with star/Delta starter and switch coupled to a pony brake.	- do -	

1	2	3	4
8.	Motor A.C.phase wound (slip ring type) 3 Phase 400 Volts, 50 Cycles 5 HP. complete with starter switch and pen; brake.	1 Unit	*
9.	Motor A.C.Repulsion type, single phase 230 volts, 50 cycles, complete with starter switch.	-do-	
10.	Motor A.C.Auto-synchronous, 400 Volts 50 cycles 5 HP. complete with starting arrangements.	-do-	
11.	Motor A C split phase, 230 Volts, 50 Cycles 1 HP complete with starter switch.	-do-	
12.	Motor A.C.Repulsion type, single phase. 230 volts, 50 cycles, 1 HP complete with starter switch.	-do-	
13.	Motor Universal, 230 Volt, 50 cycles, 1 HP complete with starter switch etc.,	-do-	
14.	Motor A.C.Single phase, capacitor type 230 Volts, 30 cycles, 1 HP.	-do-	
15.	Transformers single phase 1 KV 400/230 volts 50 cycles shell type, oil cooled, H.I.delth I.T.Star.	-do-	
16.	Transformer Single phase, 1 KVA 400/230 volts 50 cycles core type air cooled.	-do-	
17.	Machine, coil winding automatic	-do-	
18.	Tanger Rectifier, 15 Volts. 15 Amps. output.	-do-	
19.	Rheostats different sizes.	100 Nos.	
20.	Megger. 250 volts.	1 No.	
21.	Bridge Megger. 500 Volts	1 No.	
22.	Resistance bridge (including P.O.Box)	2 Nos.	
23.	Capacitance test bridge.	1 No.	
24.	Inductance bridge.	1 No.	
25.	Impedance bridge.	1 No.	
26.	Radio frequency bridge.	1 No.	
27.	Multi-meter	8 Nos.	
28.	Power output meter.	6 Nos.	
29.	Signal tracer.	4 Nos.	
30.	Ohm-meter.	1 No.	
31.	Valve tester.	2 Nos.	
32.	Transistor Tester.	1 No.	
33.	Grid dip meter.	1 No.	
34.	Distortion Factors meter	1 No.	
35.	Attenuators	6 Nos.	

1	2	3
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- 36. Vacuum tube voltmeter. 4 Nos.
- 37. Audio Oscillators including BFO. 6 Nos.
- 38. Signal Generator. 2 Nos.
- 39. Pulse Generator. 3 Nos.
- 40. Cathode ray oscilloscope 8 cm single beam 4 Nos.
- 41. -do- 15cm double beam 2 Nos.
- 42. Transistorised insulation tester. 2 Nos.
- 43. Transistorised insulation tester. 2 Nos.

VII. CARPENTER.

- 1. Planer 300 mm 1 No.
- 2. Saw circular 300 mm dia motorised. 1 No.
- 3. Lathe, wood working 150 mm ht. of centres 1 No.
1.75 Mtrs. bed motorised, complete with
a set of turning tools.
- 4. Bench Grinder 150 mm wheels, D.E. 1 No.

VIII. MECH. REF.
& AIR CONDITION-
ING .

- 1. Refrigerator, House hold assorted types 4 Nos.
(Reciprocating), and with different
capacities.
- 2. Compressor, Fractional HP for Refrigerator 1 No.
- 3. Air conditioning plant, window type 1 No.
1015 Kgs.
- 4. Ice Candy Plant (Smallest capacity 1 No.
available)
- 5. Bottle cooler, commercial type (Smaller) 1 No.
- 6. Refrigerator, Absorption Type. 1 No.
- 7. Commercial type condensing unit with 1 No.
control 5 to 10 TR Approximately.
- 8. Discalling pump set complete. 1 No.
- 9. Thermostatic Expansion Valve. 4 Nos.
- 10. Automatic Expansions Valve 4 Nos.
- 11. Thermostatic switch. 4 Nos.
- 12. Low pressure switch (Domestic) 2 Nos.
- 13. Solenoid valve 2 Nos.
- 14. High pressure switch (Domestic) 2 Nos.
- 15. Relay sealed unit 1/5 or 1/4 HP 2 Nos.
- 16. Relay for Aid Conditioner. 2 Nos.
- 17. Check valve. 1 No.
- 18. Two temperature valve 1 No.
- 19. Line Service valve 6 x 6 mm 1 No.
- 20. Liquid line indicator 9 x 9 mm 2 Nos.

	1	2	3	4
21. Refirgerant Filters.				2 Nos.
22. Dehydrated drier 6 x 6 mm				2 Nos.
23. Two way valves 6 x 6 mm				2 Nos.
24. Three way valves 6 x 6 mm				2 Nos.
25. Humidistat.				1 No.
26. Pilot tube and monometer				1 No. each
27. Volometer.				1 No.

IX
BLACKSMITH.

1. Forge with hood and chimney blowers forge capacity 100 cft/mm 15 cm. water guage pressure complete with electric motors, starter and switch with air pipeline, cocks etc., complete set. 3 Nos.
2. A pneumatic hammer 50.8 kg with accessories capacity 30 cm. stroke motorised. 1 No.
3. Pillar type drilling machine 12 mm capacity 1 No.
4. Blacksmiths cones 25 to 38 mm 76 to 254 mm 2 Nos.
5. Electric furnace with pyrometers. 1 No.
6. Pedestal grinder with 20 cm. wheels. 1 No.
7. Lever shot handoperated. 1 No.
8. Pipe bending machine manually operated. 1 No.

MACHINIST.

1. Shaping M/C 450 mm Stroke (Motorised) with all attachments. 1 No.
2. Shaping M/C 315 stroke (Hydraulic) with all attachments. 1 No.
3. Double column planer 1500 x 1000x1000 (motorised) with all attachments. 1 No.
4. Slotter 180 mm. Stroke (motorised) with all attachments. 2 Nos.
5. Lathe General purpose all geared-height of Centres 150 mm to admit between Centres 750 mm supplied with with 3 Jaw and 4 Jaw Chuck, face plate, taper turning attachment, steady, etc., and set of lathe tool. 2 Nos.
6. Wheel and Cutter Grinder 250 mm to admit 450 mm between centre-fully motorised work head supplied with tool rest of different types table clamps and other attachments. 1 No.
7. Drilling machine Pillar 20 mm capacity. 1 No.
8. Radial drill 1200 mm area, motorised - with tapping attachment. 1 No.
9. Silicon Carbide Grinder for Carbide tipped tools. 1 No.
10. Milling machine universal horizontal (Motorised) No. 1 with all attachments such as 1 No.

..... 1 2 3 4

a) Universal Head b) Vertical Head
 c) Skotting attachment d) Rock Cutting
 attachment e) Rotary Table f) Dividing
 Head g) Adaptors, arbors and Collects
 etc., for straight shank and mill
 from 3 mm to 30 mm.

- | | |
|---|-------|
| 11. Milling machine universal horizontal No. Zero with all attachments. | 1 No. |
| 12. Milling Machine plain type horizontal (Motorised) No. 2 with all attachments. | 1 No. |
| 13. Milling machine vertical No. (motorised) with all attachments. | 1 No. |
| 14. Surface grinding machine, wheel dia 180 mm (or near) reciprocating table, longitudinal table traverse 100 mm (or near) fitted with adjustable travers stop. Full motorised supplied with magnetic chuck 250 mm x 100 mm diamond tool holder set of spanner grease gun etc., | 1 No. |
| 15. Forge Portable hand blower 375 mm to 450 mm dia. | 1 No. |
| 16. Anvil. 50 Kg with stand. | 1 No. |

**WELDER.
 (GAS &
 ELECTRIC)**

- | | |
|---|-------------------------------|
| 1. Transformer welding 200-300 amps. continuous welding current with all accessories. | 3 Sets |
| 2. Arc welding set, Rectifier type 200-300 amps, continuous welding current with all accessories. | 1 Set |
| 3. Welding generator AC/DC rotary set 200-300 amps with all accessories. | 2 |
| 4. Welding cables to carry 350 amps. with (flexible Rubber). | 45 Mtrs. |
| 5. Lugs for cables. | 24 Nos. |
| 6. Oxygen cutting machine (line & Circle) | 1 No. |
| 7. Acetylene -Generator. | 1 |
| 8. Acetylene -Generator complete (water to carbide) | 1 |
| 9. Acetylene -Generator complete (Carbide to water). | 1 |
| 10. Gas Welding Table 122 cm x 92 cm x 60 cm five brackets on stand with Positioner. | .. 6
one for each trainess |
| 11. Arc Welding Table (all metal with positioner 122 cm x 92 cm x 60 cm. | .. 6 |
| 12. Trolley for cylinders (H.P Unit) | .. 2 |
| 13. Bench Shear Hand capacity upto 3 mm. | ... 1 |
| 14. D.E. Grinder 30 cm wheel motorised Redestal Type mm. | .. 1 |

	1	2	3
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- 15. Vice Bench 10 cm Jaw. .. 6 Nos
- 16. Bench working 182 cm x 122 cm x 62 cm .. 1 No.
- 17. Steel Almireh 182 cm x 122 cm x 45 cm. .. 2 Nos.
- 18. Lockers steel with provision for 12 pigeon holes .. 1
- 19. Fire Buckets with stand. .. 3 Nos.
- 20. Fire extinguishers (foam type and Co 2 type) .. 2 each.

MACHINIST GRINDER:

- 1. Lathe 75 cm between centres x 180 cm Centre height with 4-Jaw independent chuck, self centering chuck, set of lathe tools, lathe carriers etc., complete. .. 2
- 2. Drilling M/C Filler 0-12 mm capacity. .. 2
- 3. Grinding machine external cylindrical fully motorised and supplied with face plates & driving dogs, 3-Jaw self centering chuck, 4-Jaw independent chuck, tail stock assorted centres, sud pumps, tank, all guards and pipe fittings spanners and grease gun (each machine to be supplied with assorted grinding wheels for general purpose work with internal grinding attachment). .. 2
- 4. Grinding machine plain surface, wheel dia 175 mm (or near) with reciprocating table having longitudinal table traverse-- 200 mm (or near) fully automatic and fitted with adjustable traverse stops. Machine to be fully motorised and fitted with ace guards and pump tank and pump fittings and also to be supplied with with magnetic chuck 250 x 112 mm. Diamond tool holder, set of spanners, grease gun, oil-can and spare grinding wheel for general purpose grinding. .. 2
- 5. Grinding machine, plain, surface with horizontal and vertical spindle, receipt coating table having longitudinal table traverse, fully motorised and supplied with set of spanners, necessary equipments, diamond tool holders for wheel sized 175 x 30 x 18 mm, suitable cup wheels for vertical spindle, spare wheel, proper guards and coolant pump with pipe fittings. .. 2
- 6. Tool and Cutter grinding machine of size 250 x 175 mm fully motorised supplied with chuck, centres, tool rest, height gauge, table clamps, universal vice, tooth rest, diamond dressing tool and holding attachment, equipment for tool grinding and assorted grinding wheels for all tool room work (with twist drill grinding attachment). .. 2

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- 7. 180 x 90 x 180 cm lapping machine with motor and chuck 132 cm dia. .. 1
- 8. Grinding machine universal machine to be motorised and supplied with assorted arbors, spindles for internal work, 3-jaw self centering chuck, 4-Jaw independent chuck, face plate driving dogs, tail stock and centres. Machine to be completed with all guards, sud pump, sud tank, pipe fittings diamond tool holder fixtures, radius dressing attachment & with spanners(internal and external) & General purpose grinding cylindrical magnetic chuck(permanent) 200 mm dia. .. 2
- 9. Small type hand Honing machine with motor, stand and bracket & with sets of different types of Honing stones and other accessories. .. 2

MECHANIC DIESEL:

- 1. Grinder with two 18 cm wheels with twist drill grinding attachment. .. 1
- 2. Diesel Engine 2-stroke cold start vertical (upto about 15 HP) .. 1
- 3. Diesel Engine, cut away to show working parts.. 1
- 4. Engine Diesel fuel injection type- 4-stroke vertical upto 15 HP .. 1
- 5. Diesel engine 4 or 6 cylinder vehicle type .. 1
- 6. Petrol engine 4 stroke 10 HP vertical .. 1
- 7. Petrol engine 2-stroke 5 HP,vertical .. 1
- 8. Arbor press. .. 1
- 9. Fly press. .. 1
- 10. Diesel Engines(second hand)upto 15 HP .. 2

MECHANIC MOTOR VEHICLE:-

- 1. Grinder with two 7" wheels with twist drill grinding attachment. .. 1
- 2. Lathe 30" between centres x 6" centre height complete with accessories(SSC) .. 1
- 3. Arbor press hand operated 1/2 ton. .. 1
- 4. Welding plant oxy-acetylene complete (high pressure) .. 1
- 5. Welding plant electric. .. 1
- 6. Motor Lorry in running condition(Diesel) .. 1
- 7. Motor Car in running condition. .. 1
- 8. Motor Vehicle 3 ton(old) (petrol)3048 Kg .. 1
- 9. Motor Lorry(and model) (old) .. 2
- 10. Petrol Engine(running condition, Car type) .. 1

1	2	3	4
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FOUNDERS:-

1. Mix muller sand 15 Kg capacity Twin rollers, corporate power unit to suit main supply. .. 1
2. Moulding machine hand squeeze with a stripping device, pin life type. .. 1
3. Oiled fired furnace 100 Kg. filting .. 1
4. Auto sand riddle, with sand 3 tons/hours riddling capacity .. 1
5. Weighing machine 300 Kgs by 100 grams. .. 1
6. Cupola capacity 1 1/2 tons/hour complete with rated blower pipe line, blast control pressure gauge, tyces valves and a charging platform. .. 1
7. Pedestal grinder, O.E.35 cm power operated .. 1
8. Core Oven 60 Cms. .. 1
9. Cupola Torch/Mould drying oiled fired transportable large size. .. 1
10. Electric hoist 500 kgs swivel, fast lift. .. 1

MECHANICAL/MILD-STEEL MAINTENANCE: 1

1. Lathe, Graded General purpose S.S.E gap bed 1800x215 mm. height of centre motorised, fully equipped with accessories. .. 1 No
2. Lathe Graded General purpose all geared - height of centre 150 mm to admit 720 mm between centres-motorised supplied with 3 Jaw 3 4 Jaw, self centre chuck face plate, driving plate, Taper Turning attachment, Steady rest with all other accessories and set of Lathe Tools. .. 1 No
3. Shaper 150 mm stroke motorised with all accessories. .. 1 No
4. Slotter 200 mm stroke motorised with accessories. .. 1 No
5. Milling Machine universal motorised with all attachment and all accessories. .. 1 No
6. Double Ended Grinder (pedestal) with 178 mm wheels one fine and one rough motorised with twist drill grinding attachment. .. 1 No
7. Surface grinding machine wheel size 178 x 130 x 32 mm. bore, longitudinal and cross average 460 mm respectively. Table size 450 x 150 mm motorised complete with all accessories such as balancing unit, magnetic chuck 300 mm x 150 mm (rectangular) dressing fixture, diamond and other dressers, Universal Vice, Machine Vice, Angle Plates, Magnetic Parallel, G-Clamp 150 mm - 75 mm cap. grinding wheel of silicon carbide and al. oxide etc., .. 1 No

1	2	3	4
8.	Grinding machine Universal wheel 300 x 38 x 127 mm fully motorised with all accessories such as precision statistical balancing unit with spindle upto 350 mm dia, diamond dresser & dressing fixture, pin hole spinner adjustable, wheel puller, base spinner, Test bar 100 x 25 mm with 3 Morse sh. k, radius dressing fixturing wheels of different sizes of Al.oxide and silicon carbide, internal grinding wheel etc.,		.. 1 No
9.	Drilling (Miller) Sensitive capacity 20 mm Motorised with chuck and key etc.,		.. 1 No
10.	Drill power 10 mm cap. Bench type precision motorised.		.. 1 No
11.	Portable hand grinder 150 mm dia. motorised		.. 1 No
12.	Portable hand grinder, 100 mm dia (lighter type)		.. 1 No
13.	Arbour type straightening hydraulic press 5000 Kg cap.		.. 1 No
14.	Portable Drill 6 mm		.. 1 No

TOOL AND DIE MAKER:-

1.	L. tho, Graded General purpose s.s.c. gap bed 1100x215 mm height of centre, motorised, fully equipped with all accessories.		.. 2 Nos
2.	Tool room lathe 1200 x 150 mm fully equipped with all accessories.		.. 1 No
3.	Slaper 450 mm stroke, motorised with all accessories.		.. 1 No
4.	Slotter 200 mm stroke, motorised with accessories.		.. 1 No
5.	Universal Milling Machine with different metric size arbor and complete with all accessories.		.. 1 No
6.	Vertical Milling Machine complete with metric arbors and all accessories including following attachments: slotting attachment, Rotary attachment.		.. 2 Nos
7.	Double ended grinder (Pedestal) with 178 mm wheels (one fine and one rough) motorised, with twist drill grinding attachment and facilities to grind carbide tipped tool.		.. 1 No
8.	Surface grinding machine, wheel size 178 x 13 x 52 mm. bore. longitudinal and cross Traverse 4.0 mm respectively. Table size: 450 x 150, motorised, complete with all accessories such as balancing unit, magnetic chuck 300 mm. x 150 mm (Rectangular) magnetic block, dressing fixture, diamond and other dressers, Universal vice, Machine vice, Angle plates, magnetic parallels, C-clamp 150 mm - 75 mm cap. Grinding wheel of silicon carbide and Aluminium Oxide etc.,		.. 1 No

9. Grinding machine Universal, wheel size 300 x 38 x 128 mm, fully motorised, with all accessories such as precision statical balancing unit one spindle upto 350 mm, dia diamond dresser and dressing fixture, pin hook spanner (adjustable), wheel puller, base spanner, Tool bar 300 x 25 mm with 2 Morse shank, radius dressing fixture, grinding wheel of different sizes of Al₂O₃ and Silicon carbide, internal grinding wheel etc., .. 1 No
10. Drilling (Miller) sensitive, capacity 20 mm, motorised with chuck and key etc., .. 1 No
11. Drill, Power, 10 mm cap. Bar h type precision motorised. .. 1 No
12. Portable hand grinder 150 mm dia motorised .. 1 No
13. Flexible hand grinder 100 mm dia (light type) .. 1 No
14. Tool & Cutter grinder 200 x 400 mm complete with all attachments. .. 1 No
15. Do all hand saw machine .. 1 No
16. Salt bath furnace (Electric) .. 1 No
17. Electric furnace with pyrometer and facilities to harden H.S.S. .. 1 No
18. Welding equipments (if available in the Institute & may be used other-wise to be included in the list) .. 2 No
19. Fly press 5000 Kgs .. 1 No
20. Power press 30,000 Kg, capacity with standard accessories. .. 1 No
21. Jig borer, medium size with optical reading facilities complete with all accessories. .. 1 No
22. Radial drilling machine (if available in the Institute may be used other-wise to be included in the list) .. 1 No
23. Pantograph machine. .. 1 No
24. Die Filer, reciprocating with stand. .. 2 Nos
25. Files for die filer, 8" length, 00 cut.
 1. Filer type 1/16" ϕ 2 Dozen
 2. Filer type 3/8" ϕ each.
 3. 3/16" three square shaper. 2 "
 4. 3/32 -do- 2 "
 5. 3/16" Round -do- 2 "
 6. 3/8" -do- 2 "
 7. 3/16" Half round -do- 2 "
 8. 2/8" square shaper 2 "
 9. 3/16" square shaper -do- 2 "
 10. 3/8" square shaper. 2 "
 11. 11/32 x 3/16" oval shape. 2 "

1	2	3	4
26.	Centre finder or wiggler complete with 3 attachments.		4 Nos
27.	Quenching tank (May be fabricated)		1 No
28.	Electroplating tank complete with all equipments 1 x 0.75 x 0.75 meter sizes.		1 No
29.	Rockwell hardness testing machine.		1 No

MECHANIC TRACTOR:-

1.	Grinder with two 18 cm wheels with twist drill grinding attachment.		1
2.	Compressor capacity 12 c.ft. piston type with pressure gauge (for inflating of tubes etc.,)		1
3.	Hydraulic Jack HI-LIFT type.		1
4.	Crawler type tractor fitted with diesel engine with accessories and special tool (50 to 60 draw-bar H.P)		1
5.	Wheel type tractor fitted with diesel engine with standard accessories and special tools (30 ton 40 draw bar HP)		1
6.	Training ploughs (mould board type). 3 furrow 30 cm. bottoms deep digger.		1
7.	Tiller ore cultivator with a mounted disc plough		1 No
8.	3 Furrow disc, plough with scrapers.		1 No
9.	Ridger		1 No
10.	Rear axle assembly-Gear Box, steering box assembly - of the Diesel Engine Tractor.		

ANNEXURE-II

LIST OF EQUIPMENTS NOT SUPPLIED

Acetylene Generator Water to Carbide, Bandsaw Machine, scales
Card Board M1. to M8, Combination turning up and working machine
Tin Smith Bench Flodder 24" X 16" Gauge, Machine Circle Cutting
12" Diameter, Pillar Type Drilling Machine of 1", Slip Roll Forme
16 Gauge, 36" Grinder, Pedestal Motored 8" Diameter, Arbour Type
Straightening, hydraulic press, Forge Portable Hand Blower, Anvil 150 Kgs., Currer
Transformer Smallest Range available, Water Rheostat for loading
Stop Watch, Revolution Counter with Watch, scissis Blade 150 mm.,
Cramping Tool, Starter for 3 faces 50 Volts Automatic Star Delta,
Weighing Machine, Electronic Hoist 500 Kgs. Swevel Fast Lift,
Small Type Hoing Machine, Engine Diesel Fuel Engine Type 4 strokes
Petrol Engine 4 strokes 10 HP Vertical, Petrol Engine 2 Strokes
5 HP Vertical, Meggar 250 Volts, Bridge Meggar, Grinder with two
18 Cms wheels with Twist Drill Grinding attachment, Transistorised
Insulation Tester, Michro Ammeters, D.C. Ammeters, Rectifier type
Michro Meter, A.C. Ammeters, Thermo Couple type R.F. Milli Meter,
D.C. Voltameter, Watt Meter, Serve System ~~Demonstration~~ Panel,
Analogue Computer, Drawing Instrument Box containing 12 items,
Semi Circular Scale Plotting Box Wood 6 Metric Scales 30 Cms.
long, Set Squires, Celluloids 2 mm thickness level edgs, 40^o, 8",
French Curves, Transport Plastic Set, Flexible Curves 12",
Radius curve metric, clinograph Wooden, Drafting Machine Vertical
type with board and adjustable table, brass parallel ruler,
perimeter Sliding Bar 70 Cms. and Tracing Table with Glass
plates.

ANNEXURE - III

LIST OF EQUIPMENTS TO BE SUPPLIED DUE
TO CHANGE IN TECHNOLOGY

Equipments like Lathe, all Geared Head Stock S.S.S.C.
Grinding Machine, Honing Machine, ^a Surface Grinding Machine, Bench
Grinder, Milling Machine, Drilling Machine multiple Spindle, Gear
Bobbing Machine, Centreless Grinder, Brochure or Brochure Machine,
Milling Machine Universal with attachment, Welding Generator,
Bench Sheer, Rectifier Set, Gas Welding, Spot Welding Machine,
D.E. Grinder, All Geared Head Stock Lathe, Transformer, Oil
cooled and Air Cooled, Battery Charged Unit, Tape Recorder,
Colour T.V. Receiver, Video & Cassette Recorder, Video Player,
Colour Generator, Digitizing Multimeter, Digital Frequency Counter,
I.C. Trainer Kit, Electronic Calculator for Scientific
Calculation of Solar Power, Digital Electronic Trainer, N.C.
controlled Drilling Machine, Stereo Deck, Jig Bore Machine,
N.C. Machine Milling, Metal Cutting Band and Tool Room Lathe.

ANNEXURE - IV
REMARKS OF PRINCIPALS

I.T.I. MADIKERI:-

The existing machines are old/^{and}out dated and the trainees going out of this Institute will have to work with sophisticated machinery in Industries and as such ^{in view} keeping/with latest development in Engineering, Modern Machinery & equipments should be purchased for importing advanced skills and specialised staff required for operation and maintenance of such machinery. The existing staff can be deputed to reputed Industries to acquire specialisation in the field of operation and maintenance ultimately with a view to improve the quality of Training.

I.T.I. MANGALORE:

The technical staff to be trained well in the latest techniques of modern machineries.

I.T.I. HASSAN :

Most of the existing machinery and equipment are old for which spares are not readily available, for replacement. Since the machines are handled by learners (trainees) wear & tear and break-downs are more frequent which require full pledged maintenance personnel and constant supply of spares. Up dating the machinery and equipment has to be taken up in a phased manner which requires enough funds.

The Institute is functioning in the present building since 1961. Many equipments, tools have become obsolete and there is a need for sophisticated tools and equipments to impart training in a better way so that the trainees can put into the Industry

easily. During the Seventh Plan it is proposed to provide needed equipments and also to diversify the courses keeping in view, the latest technological developments.

I.T.I. K.G.F.

1. It is necessary to have zonalised maintenance squaxd to take care of break down machines in the Institute.
2. Where ever there is major break down permission to ontrust to outside agencies may be thought of.
3. Sufficient funds under tools and equipment must be provided to scrop the old machines and to purchase new machinos.

I.T.I. HUBLI:

Vacant posts are to be filled up at an early dato. Old machines & tools are to be replaced with latest ones. Besides, Hostel, staff quarters and play ground to be provided.

Annexure - V(1)

Distributing Industrial Training Institutes according to year of establishment and their Intake Capacity.

Year	No. of I.T.I's	Intake Capacity
1974	12	3,791
1979	18	5,59
1981	21	5,255

Annexure - V(2)

Distributing of Industrial Training Institutes according to trade and year of establishment and their Intake Capacity.

Sl. No.	Trade	1980		1981		Total	
		No. of I.T.I	Intake Capacity	No. of I.T.I	Intake Capacity	No. of I.T.I	Intake Capacity
1.	Blacksmithy	1	16	-	-	1	16
2.	Carpentry	3	48	-	-	3	48
3.	Moulder	4	60	-	-	4	60
4.	Mechanic(Refrigerator & AC)	2	32	-	-	2	32
5.	Mechanic(Motor Vehicle)	9	256	1	16	10	272
6.	Sheet Metal Workers	3	80	-	-	3	80
7.	Welder	14	456	-	-	14	456
8.	Cutting & Tailoring	3	64	-	-	3	64
9.	Stenography	4	96	-	-	4	96
10.	Diesel Mechanic	8	176	-	-	8	176
11.	Tractor Mechanic	3	80	-	-	3	80
12.	Draughtsman(Mechanical)	9	206	2	64	11	270
13.	Draughtsman(civil)	2	48	-	-	2	48
14.	Electrician	17	660	1	48	18	708
15.	Mechanist	13	442	1	24	14	466
16.	Turner	15	714	1	48	16	762
17.	Fitter	18	1168	3	128	21	1296
18.	Wireman	4	112	-	-	4	112
19.	Pattern Maker	3	48	-	-	3	48
20.	Mechanist(Grinder)	3	73	-	-	3	73
21.	Instrument Mechanic	1	32	-	-	1	32
22.	General Electronics	1	32	-	-	1	32
23.	Mill Wright Mechanic	2	48	-	-	2	48
24.	Electro Plater	1	16	-	-	1	16
25.	Tool & Die Maker	1	16	-	-	1	16
26.	Radio & TV	1	48	-	-	1	48
		145	5027	9	328	154	5355

Annexure - V(3)

Number of instructors post sanctioned, Number in position according to different trades.

Name of Trade	Number sanctioned	Number in position	Number undergoing training in basic course	Number for refresher course	Number to be sanctioned	Number to be sent for refresher training
Cutting & Tailoring	3	3	1	--	2	3
Stenography	6	5	4	--	1	4 5
Refrigeration & Air condition	1	1	1	--	--	1
Moulder	4	4	4	--	--	4
Tractor Mechanic	4	4	3	--	1	4
Mechanical Diesel	10	9	9	--	--	9
Sheet Metal Maker	5	5	5	--	--	5
Electroplating	1	1	1	--	--	1
Welder	35	34	34	2	2	32
Draughtsman(Mech)	17	14	12	--	2	14
Electrician	41	36	36	5	--	31
Instrument(Mechanic)	4	4	4	--	--	4
Mechanist Grinder	4	4	3	2	1	2
Mechanic General Electronics	1	1	1	--	--	1
Mill writ mechanic	6	5	5	1	--	4
Mechanist	33	29	29	2	--	27
Mechanic(Moto vehicle)	11	11	11	2	--	9
Pattern Maker	3	3	3	--	--	3
Mechanic Radio&TV	2	2	2	--	--	2
Tool& Die Maker	1	1	1	--	--	1
Turner	63	58	53		5	54
Wireman	7	7	6	1	1	7
Fitter	78	70	66		4	67
Carpentry	3	3	3	--	--	3
Blacksmithy	1	1	1	--	--	1
Draughtsman(civil)	3	3	3	--	--	3
Engineering drawing	9	9	9	2	--	7
Mathematics	6	4	4	--	--	4
W/e Cal & Science	6	5	5	1	--	3
Supervisors	2	1	1	--	--	1
Total	371	337	320	25	17	312

Appendure - V(4)

No of Machines/Equipment required, supplied and condition of Machine in each trade.

Name of Trade: Machinist.

Sl No	Name of the Machine	Condition of Machines/					
		Number: required	Number: supplied	work-ing	repair-able	require-replacement	
1		2	3	4	5	6	7
1.	Shoping machine 450 mm 20" stroke	36	35	21	11	6	3
2.	Shoping machine 315 mm Hydrolyic stroke	24	21	13	5	-	3
3.	Double column planer 1500 x 1000 motorised	32	32	29	3	-	-
4.	Lathe all geared 150 mm centre height	33	22	16	-	4	2
5.	Slatter 180 mm stroke with all attachment	38	30	24	6	-	-
6.	Tool & Cutter Corinder 50 mm to admit 405 mm with tool rest of different types of table clamps	18	11	10	1	-	-
7.	Radial drilling 1200 mm with topping attachment	18	13	11	2	-	-
8.	Silicom corbide grindez for corbide tipped tools	19	11	7	4	-	-
9.	Milling machine universal horizontal No.with all attachment	33	32	30	2	-	-
10.	Bench grinder	12	9	7	2	-	-
11.	Milling Machine No.300	16	8	3	-	-	-
12.	Milling machine No.2 plain type	12	10	9	1	-	-
13.	Milling machine Vertical No.1	24	21	21	-	-	-
14.	Surface grinding machine wheel with 180 mm recipro- cating table	20	15	9	6	-	-
15.	Forze portable handblower	7	-	-	-	-	-
16.	Anvil 1.50 Kg	4	-	-	-	-	-
17.	Universaal cylindrical grinder	4	4	2	2	-	-
18.	Drilling machine drill type	8	8	8	-	-	-
19.	Power saw	2	2	2	-	-	1

Annexure - V(4)

No. of Machines/Equipment required, supplied and condition of Machines in each trade.

Name of Trade - Welder.

Sl No.	Name of the Machine	Condition of Machines/ equipment						
		:Number: required	:Number: supplied	:Work- ing	:recul- rable	:irrep- arable	:out of order	:repa- ired
1	2	3	4	5	6	7		
1.	Transformer welding 200 - 300	45	34	22	7	5	-	
2.	Arc welding set Rectifier type	14	10	7	3	-	-	
3.	Welding Generator	39	38	20	8	10	-	
4.	Welding cables in Meters	45	20	20	-	-	-	
5.	Lugs for cables	24	24	24	-	-	-	
6.	Oxygen cutting machine	10	12	6	-	6	-	
7.	Acetylane generator	2	-	-	-	-	-	
8.	Acetylane generator water to carbide	5	-	-	-	-	-	
9.	Acetylane generator carbide to water	8	2	-	-	-	2	
10.	Gaswelding table fire bricks on stand	-	-	-	-	-	-	
11.	Arc welding table all metal	6	-	-	-	-	-	
12.	Trolley for cylinder	2	-	-	-	-	-	
13.	Bench shear hard capacity upto 31 mm	5	2	2	-	-	-	
14.	D.E.Grinder, 30 c.m.	13	7	6	1	-	-	
15.	Vice bench with 10 c.m.jaw	6	6	6	-	-	-	
16.	Bench working	2	1	1	-	-	-	
17.	Steel Almirah	2	1	1	-	-	-	
18.	Lockers (steel)	1	1	1	-	-	-	
19.	Welding helmets	4	4	4	-	-	-	
20.	Fire Buckets	3	3	3	-	-	-	
21.	Fire extinguishers	2	2	2	-	-	-	

Annexure - V(4)

No. of Machines/Equipment required, supplied and condition of Machines in each trade.

Name of Trade - Fitter

Sl No	Name of the Machine	Number		Condition of Machines/Equipment			
		required	supplied	work- ing	repair- able	repair- required	out- of- stock
1		2	3	4	5	6	7
1.	Drilling machine pillar type sensitive 20 c.m. capacity	66	52	44	4	-	4
2.	Drilling machine sensitive bench type 0-12 mm capacity	42	20	18	1	-	1
3.	Power Hock saw machine No.9	37	27	23	3	-	1
4.	Grinding machines	19	16	15	1	-	-
5.	Electrical heat treatment furnace	11	5	2	1	1	1
6.	Anurl 50 kg onst L1	8	1	1	-	-	-
7.	Forge portable land blower	11	3	2	-	1	-
8.	Lathe all geared head stock	18	15	15	-	-	-

Annexure - V(4)

No. of Machines/Equipment required, supplied and condition of Machines in each trade.

Name of Trade : Mechanic - Refrigeration & Airconditioning

Sl No.	Name of the Machine	Number		Condition of Machines/Equipment			
		required	supplied	working	repairable	old & out of repair	not available
1	2	3	4	5	6	7	
1.	Refrigerator, Household assorted type and with different capacities	6	5	3	2	-	-
2.	Compressor fractional H.P for Refrigerator	3	3	1	2	-	-
3.	Air conditioning plant window type 1015 kg.	3	3	2	2	-	-
4.	Ice candy plant	2	2	2	-	-	-
5.	Bottle cooler commercial type	2	2	2	-	-	-
6.	Refrigerator Absorption type	2	2	2	-	-	-
7.	Commercial type condensing unit	2	2	2	-	-	-
8.	Discalling pumpset	1	1	1	-	-	-
9.	Vacume pump	-	1	1	-	-	-
10.	Freezer	-	1	1	-	-	-
11.	Water cooler	-	1	1	-	-	-

Annexure - V(4)

No. of Machines/Equipment required, supplied and condition of Machines in each trade.

Name of Trade : Pattern Maker

Sl No.	Name of the machine	Number		Condition of Machines/ equipment			
		:requi-:red	:suppli-:ed	:work-:ing	:requir-:es	:irrepa-:rable	:Old & :out :moded
		2	3	4	5	6	7
1.	Universal wood working planner	3	3	-	3	-	-
2.	De-voet saw machine	1	1	1	-	-	-
3.	Circular saw machine 18"	1	1	1	-	-	-
4.	Wood turning Lathe	3	3	3	-	-	-
5.	Drilling machine	1	1	1	-	-	-
6.	Band saw machine	1	-	-	-	-	-
7.	Adjustable saw machine	2	1	1	-	-	-
8.	Pedestal grinding machine	1	1	-	1	-	-

Name of Trade : Cutting & Tailoring

1.	Industrial model Treadle sewing machine	6	6	6	-	-	-
2.	Tailoring model old singer machine	10	10	10	-	-	-
3.	Tailoring model Usha	22	22	20	-	-	2
4.	Usha link model	2	2	2	-	-	-
5.	Usha Aristocraft	2	2	-	2	-	-

Name of Trade : Stenography

1.	Type writers	19	18	18	-	-	-
2.	Duplicating machine	2	2	2	-	-	-

Annexure - V (4)

No. of Machines/Equipment required, supplied and condition of Machines in each trade.

Name of Trade : Sheet Metal.

Sl No.	Name of the Machine	Number:		Condition of Machines/			
		required	supplied	Working	Repairable	and out of order	replaced
1	Light general purpose portable forge	2	-	-	-	-	-
2	combination turning up and working machine	1	-	-	-	-	-
3	Gerillotone squaring shears	1	1	-	1	-	-
4	Beeding machine with 15th Traut clearance	1	1	1	-	-	-
5	Tinsmith bench floder 24" x 16 guage.	1	-	-	-	-	-
6	Machine circle cutting 12" dia	1	-	-	-	-	-
7	Pillar type drilling machine 1/2"	1	-	-	-	-	-
8	Sliproll former 16 guage 36"	1	-	-	-	-	-
9	Grinder pedestral motorised 8" dia.	1	-	-	-	-	-

Name of Trade : Wireman

1.	D.C.Shunt Motor 2 to3 HP	1	1	1	-	-	-
2.	D.C.Compound Motor 2to3 HP	1	1	1	-	-	-
3.	M.G.Set and A.C.induction motor 5 H.P.	1	1	1	-	-	-
4.	5.H.P.stripping Motor	1	1	-	1	-	-

Name of Trade : Electroplater.

1.	Buffing Machine 36" spindle with Mollar Motorised	1	1	1	-	-	-
2.	Buffing machine Mist speed	1	1	1	-	-	-
3.	Rectified A.C.38 0/4 GV	1	1	1	-	-	-
4.	Rectified A.C. 7.5 1500 Amps	1	1	1	-	-	-
5.	M.G. Set-6/12 Volt 450 Amps	1	1	1	-	-	-

Annexure- V(4)

No. of Machines/Equipment required, supplied and condition of Machines in each trade.

Name of Trade: Draughtsman Mechanical

Sl No.	Name of the Machine	Number:		Condition of Machines/ equipment			
		requi- red	suppl- ied	Work- ing	repa- rable	Irrep- arable	Old out- dated
1	2	3	4	5	6	7	8
1.	Pentograph 24"	14	6	5	1	11	2
2.	Planimeter sliding Bar pattern max 28"	10	2	2	-	--	--
3.	Drafting Machine complete with accessories(42 x 29")	29	11	-	-	11	--
4.	Printing frame 18 x 24"	11	4	3	1	--	--
5.	Drawing instrument box	16	16	-	-	--	16
6.	Scale Set Card board	16	16	-	-	-	--
7.	Set squares 45 (celluloid)	16	16	-	-	16	--
8.	Set squares 30 & 60	16	16	-	-	16	--
9.	Drawing board	16	16	-	-	16	--
10.	T. & Squire 30"	16	16	-	-	16	--
11.	Protractor 6"	16	16	--	-	16	--
12.	Sliderule carved 10"	2	2	2	-	--	--
13.	Set of models(Geometrical)	1	1	-	-	1	--
14.	Steniclset complete in box	1	1	-	-	1	--
15.	Washing tray	1	1	1	-	-	--
16.	Blackbord instrument box	1	1	-	-	1	--
17.	Blue printing machine	1	1	-	-	1	--
18.	Blue printing machine	1	1	-	-	-	1
19.	Blue printing machine Automatic with Ammonia	1	1	1	-	-	-

Annexure - V(4)

No. of Machines/Equipment required, supplied and condition of Machines in each trade.

Name of Trade : Tool & Die Maker

Sl No	Name of the Machine	Number:		Condition of Machines/			
		required	supplied	work- ing	repair- able	irrepa- rable	old and out dated
1		2	3	4	5	6	7
1.	Lathe MBD	2	1	1	-	-	-
2.	Shaper 18" stroke	1	1	1	-	-	-
3.	Slatker stroke	1	1	1	-	-	-
4.	Universal Milling machine	2	2	2	-	-	-
5.	Bench grinder	2	1	1	-	-	-
6.	Surface grinder	1	1	1	-	-	-
7.	Pillar drilling machine	1	2	2	-	-	-
8.	Tool cutter grinder	1	2	2	-	-	-
9.	Salt bath furnace	1	1	1	-	-	-
10.	Die filling machine	2	2	2	-	-	-
11.	Power press stans capacity	1	1	1	-	-	-
12.	Quinching tank	1	1	1	-	-	-

Name of Trade : Turner

1.	Lathe General purpos SSLC 135' CM bed 15 CM entro with core pulling	210	160	108	35	13	4
2.	Lathe SSC All geared 180 cm x 162 cm	99	83	40	38	5	-
3.	Lathe general purpose SSC gap bed 180 x 212	66	41	30	11	-	-
4.	Lathe turnet spindle bore 2.5 mm with swing over	19	8	7	-	1	-
5.	Hockshaw Machine	8	6	5	1	-	-
6.	Drilling machine	11	8	8	-	-	-
7.	Capston lathe	18	12	7	5	-	-
8.	Bench grinder	34	27	25	-	2	-
9.	Kirlosker lathe	23	20	19	1	-	-
10.	Herbert No.2	2	2	-	2	-	-

Annexure - V(4)

No of Machines/Equipment required, supplied and condition of Machines in each trade.

Name of Trade : Carpentry.

Sl No.	Name of the Machine	Number		Condition of Machines/ equipment			
		:requi-: :red	:suppl-: :sed	:work-: :ing	:requir-: :able	:irrepar-: :able	:old :and :out
1	2	3	4	5	6	7	
1.	Planner 300 mm	2	1	1	-	-	-
2.	Saw circular 30 mm	2	2	2	-	-	-
3.	Lathe wood working	3	2	2	+	-	-
4.	Bench grinder 150 mm wheel B.E.	3	2	1	1	-	-
5.	Band saw machine	4	3	3	-	-	-

Name of Trade : Millwright Machine

1.	Lathe goded general purpose S.S.Gap bed centre motorised	1	1	1	-	-	-
2.	General purpose lathe	1	1	1	-	-	-
3.	Shaper 450 mm stake	1	1	1	-	-	-
4.	Slotter 200 mm	1	1	-	1	-	-
5.	Milling machine universal	1	1	1	-	-	-
6.	Double ended grinding machine	1	1	-	1	-	-
7.	Surface grinding machine	1	1	-	1	-	-
8.	Grinding machine universal	1	-	-	-	-	-
9.	Drilling piller type machine	1	1	1	-	-	-
10.	Portable hard grinder motorised	1	1	1	-	-	-
11.	portable hard grinder	1	1	1	-	-	-
12.	flexible hard grinder	1	1	1	-	-	-
13.	Portable dwil gum	1	1	1	-	-	-
14.	Arbour type streightning	1	-	-	-	-	-
15.	OldHydraulic Press machine & lathes	6	6	-	-	-	6

Annexure - V(4)

No of Machines/Equipment required, supplied and condition of Machines in each trade.

Name of Trade : Electrician.		Condition of Machines/						
Sl No	Name of the Machine	Number: required	Number: supplied	Number: working	Number: in repair	Number: old and out of order	Number: to be replaced	
1	2	3	4	5	6	7		
1.	Motor generator sets(5 HP) (Sl.No 1)	6	4	2	1	1	-	
2.	Motor series DC.220 Volts 2 to 3 HP (Sl.No.17)	17	12	6	6	-	-	
3.	Motor SHUNY DC 220 Volt 2 to 3 HP (Sl.no. 3 &18)	21	17	12	5	-	-	
4.	Motor AC squineral cage 3 phase 400 volts 2to3 HP (sl.No.4 & 13)	26	15	14	1	-	-	
5.	Tunger Rectified 15 volt (sl.No.5 & 20)	10	3	2	1	-	-	
6.	Motor AC phase wound slippering type 5 HP (sl.No.6&21)	22	17	16	1	-	-	
7.	Motor AC singe phase 230 volts 11 HP Repulsion Type	9	3	3	-	-	-	
8.	Current transformer smallest range available.	2	-	-	-	-	-	
9.	Potential transformer smallest range available	7	5	5	-	-	-	
10.	Used IC Generators series, shunt and compound type for overhauling practice.	7	6	2	4	-	-	
11.	DC shunt generator 2.5 KV 220 V with control panel	6	4	4	-	-	-	
12.	DC compound generator 2.5 KW 250 Volts with control pannel etc.	3	1	1	-	-	-	
13.	Motor Generator set consisting motor shunt 5 HP 440 volts with starting compensator etc.(sl.No 13 & 16)	19	12	11	1	-	-	
14.	Mock layout car wiring	4	1	1	-	-	-	
15.	Motor generatibz set induction squiral cage 7.HP etc.	5	1	1	-	-	-	

	1	2	3	4	5	6	7
16.Motor AC Auto-synchronous smallest unit available with starter(sl.No.22)	9	6	3	3	-	-	-
17.Motor DC compound wound 220 volt 2 to 3 H.P.with starter and switch (Sl.No.23)	21	11	10	1	-	-	-
18.Motor AC single phase 230 volt 1 HP repulsion type complete with star starter etc.(Sl.No.24)	12	8	6	2	-	-	-
19.Motor AC single phase 230 volt 1 HP popularise type complete with starter series(sl.no.25)	11	5	5	-	-	-	-
20.Motor AC single phase 230 volt 1 HP popularise type complete with starter capacitor type (Sl.No.26)	10	10	6	4	-	-	-
21.Motor universal 1 HP (Sl.No.27)	11	9	8	1	-	-	-
22.Rotary converter 5 K.V.A (Sl.No.28)	11	6	5	-	-	-	-
23.Transfer ^{or} single phase core type aircooled (Sl.No.29)	18	9	6	3	-	-	-
24.Transfer ^{er} three phase shell type aircooled (Sl.No.30)	20	15	12	3	-	-	-
25.Current transformer (Sl.No.31)	10	8	8	-	-	-	-
26.Potential Transformer (Sl.No.32)	9	6	6	-	-	-	-
27.DC shunt generator (Sl.No.34)	6	4	4	-	-	-	-
28.Used DC Generator series, shunt, compound type for overhauling practice (Sl.No.33)	7	2	2	-	-	-	-
29.DC compound generator 2.5 KV with control panel etc,(Sl.No.35)	5	2	2	-	-	-	-
30.AC single phase induction motor	1	1	1	-	-	-	-
31.Bench grinder	2	2	1	1	-	-	-
32.Split phase induction motor	2	2	2	-	-	-	-

33. Coill winding machine	1	1	-	1	-	-
34. Shoded pole motor 5 HP	2	1	-	1	-	-
35. Armature testing						
36. 3.K.V.A. Motor altern- ative set.	4	4	2	2	-	-
37. Ammeter 0.30 MPC	10	6	6	-	-	-
38. Energy Meter	8	4	4	-	-	*- \sqrt{mm}
39. Frequency Meter	1	1	1	-	-	-
40. Growler machine	1	2	1	1	-	-
41. Megger	1	1	1	-	-	-
42. Post Office Box with Galvano meter	1	1	1	-	-	-
43. Volta meter	7	2	2	-	-	-
44. Walts meter	2	2	2	-	-	-
45. Water Pheostat for loading.	2	-	-	-	-	-
46. Stop watch	1	-	-	-	-	-
47. Revolution counter with watch	1	-	-	-	-	-
48. Scissors blade 150 mm	4	-	-	-	-	-
49. Crimping tool	1	-	-	-	-	-
50. Wheat stone bridge with Galvano meter	3	1	1	-	-	*- \sqrt{mm}
51. Starter for 3 phase 50 volts Automatic star deltter	4	-	-	-	-	-
52. Electric drilling machine	3	1	1	-	-	-

ANNEXURE V (4)

No. of Machines/Equipment required, supplied and condition of Machines in each trade.

Name of Trade: BOULDER

Sl. No.	Name of the Machine	Condition of Machines/ equipment					
		number required	number supplied	working	requiring repairs	irreparable	old and out of use
1	2	3	4	5	6	7	
1)	Mix mullor sand 15 Kg. capacity twin rollers, corporate power unit	2	2	2	-	-	-
2)	Moulding Machine	2	2	2	-	-	-
3)	Oil fired furnace	4	3	3	-	-	-
4)	Weighing machine 300 Kg by 100 gms	2	-	-	-	-	-
5)	Auto sand Riddle with sand 3 ton/hour riddling capacity	2	4	1	-	-	-
6)	Cupola capacity 1½ tons per hour complete with rotated blower	3	3	2	1	-	-
7)	Pedestal Grinder D.E.	2	1	1	-	-	-
8)	Core oven 60 cms	3	3	3	-	-	-
9)	Cupola Torch/Moulding drying oil fired transportable	1	1	1	-	-	-
10)	Electric hoist 500 Kgs swivel, fast lift.	1	-	-	-	-	-

ANNEXURE V (2)

No. of Machines/Equipment required, supplied and
condition of Machines in each trade

Name of Trade: MECHANIC MOTOR VEHICLE

Sl. No.	Name of the Machine	Condition of Machines/ equipment					and outmoded
		number required	number supplied	working	requires repairs	irreparable require replacement	
	1	2	3	4	5	6	7
1)	Grinder with two 7" wheels with twist drill grinding attachment	1	1	1	-	-	-
2)	Air compressor	9	9	4	6	-	-
3)	Arbor press hand operated	2	1	1	-	-	-
4)	Reboring machine	3	3	2	1	-	-
5)	Bench vice	4	4	3	-	-	1
6)	Welding plant oxy-acetylene	-	-	-	-	-	-
7)	Welding plant electric	-	-	-	-	-	-
8)	Hydrolic jack	7	7	7	-	-	-
9)	Car worker	3	3	3	-	-	-
10)	Motor Lorry in running condition (Diesel)	5	4	-	4	-	-
11)	Battery charger	3	3	1	2	-	-
12)	Motor car in running condition	6	4	4	-	-	-
13)	Motor lorry new and old model	4	3	2	1	-	-
14)	Motor vehicle (petrol)	12	11	5	4	2	-
15)	Petrol Engine	4	3	2	1	-	-
16)	Crane	1	1	1	-	-	-

ANNEXURE V (4)

No. of Machines/Equipment required, supplied and condition
of Machines in each trade

Name of Trade: MECHANIC DIESEL

Sl. No.	Name of the Machine	Condition of Machines/ equipment					
		num ber req uir ed	num ber sup pli ed	wor king	repa irs	repa irs ace ment	old and out dated
	1	2	3	4	5	6	7
1.	Grinder with two 18 cm wheels with twist drill grinding attachment	1	-	-	-	-	-
2.	Diesel Engine 2-stroke cold start vertical	5	4	3	1	-	-
3)	Diesel Engine, cut away to show working parts	3	-	-	-	-	-
4)	Engine Diesel fuel injection type 4-stroke	1	-	-	-	-	-
5)	Diesel engine 4 or 6 Cylinder	8	2	1	1	-	-
6)	Petrol engine 4 stroke 10 HP vertical	2	-	-	-	-	-
7)	Petrol engine 2 stroke 5 HP vertical	3	-	-	-	-	-
8)	Arbor press	1	1	1	-	-	-
9)	Fly press	1	1	1	-	-	-
10)	Diesel Engines upto 15HP	10	4	2	2	-	-
11)	Bus	2	2	-	-	2	-
12)	Car	1	1	1	-	-	-
13)	Jeep	1	1	-	-	1	-
14)	Crane	1	1	-	1	-	-

ANNEXURE - V (4)

No. of Machines/Equipment required, supplied and condition of Machines in each trade.

Name of Trade: Instrument Mechanic

Sl. No.	Name of the Machine	Number required	Number supplied	Working	Condition of Machines/ equipment		
					requires repairs	irreparable and require replacement	and outmoded
	1	2	3	4	5	6	7
1)	Lathe G.I.D.	2	2	2	-	-	-
2)	Drilling Machine (0.20 mm cap)	1	1	1	-	-	-
3)	Grinding Machine D.E.	1	1	1	-	-	-
4)	Engraving Machine	1	1	1	-	-	-
5)	Milling Machine	1	1	1	-	-	-
6)	Post Office Box	1	1	1	-	-	-
7)	Impedence Bridge	1	1	1	-	-	-
8)	Thermo confile pirometer	2	2	2	-	-	-
9)	Resistance bulb thomometer	2	2	2	-	-	-
10)	Distant Reading thormometer	2	2	2	-	-	-
11)	Vopour pressure thermo-meter	1	1	1	-	-	-
12)	Opital finge meter	1	1	1	-	-	-
13)	Microscope	1	1	1	-	-	-
14)	Hand drilling machine (power operator)	1	1	1	-	-	-

ANNEXURE V (4)

No. of Machines/Equipment required, supplied and
condition of Machine in each trade

Name of Trade: Mechanic - General
Electronics & Mechanic
R & T.V.

Sl. No.	Name of the Machine	Condition of Machines/ equipment						
		num ber req uir ed	num ber sup pli ed	wor king	requi res repa irs	irrepara ble repa ce ment	old repla ced	and out moded
	1	2	3	4	5	6	7	
1)	Megger. 250 V	2	-	-	-	-	-	
2)	Bridge Megger	2	-	-	-	-	-	
3)	Resistance bridge	4	1	-	1	-	-	
4)	Capacitance test induction, impedance bridges	10	10	10	-	-	-	
5)	Signal tracer	16	16	16	-	-	-	
6)	Ohm-meter	2	2	2	-	-	-	
7)	Multi-meter	68	68	56	12	-	-	
8)	Valve Transistor Tester	8	8	6	2	-	-	
9)	Grid dip distortion factor voltmeter	22	22	21	1	-	-	
10)	A.F. Oscillators	20	4	4	-	-	-	
11)	Signal pulse A M & F D standard generators	20	20	20	-	-	-	
12)	C.R.O. single double beam	20	20	20	-	-	-	
13)	Transistorised insula- tion tester	6	-	-	-	-	-	
14)	Micro Ammeters	40	-	-	-	-	-	
15)	D.C. Milli A mmeters	160	8	8	-	-	-	
16)	D.C. Ammeters	38	-	-	-	-	-	
17)	Rectifier Type Micro- meter	50	-	-	-	-	-	
18)	A .C. Ammeters	50	-	-	-	-	-	
19)	Thermo couple type R.F. milli meter	58	-	-	-	-	-	
20)	D.C. volt meter	76	-	-	-	-	-	

Contd. ANNEXURE V (4)

	1	2	3	4	5	6	7
21) Volt meter		8	-	-	-	-	-
22) Service System demonstration panel		2	-	-	-	*	-
23) Broad Casting Radio receiver		10	6	6	-	-	-
24) Analogue computer		2	-	-	-	-	-
25) Transister		22	6	6	-	-	-
26) C.C. T.V. System		2	1	1	-	-	-
27) T.V. Receiver		8	2	1	1	-	-
28) Pattern Generator		2	1	1	-	-	-
29) Turner Rectifier		2	1	-	1	-	-
30) Public Address System		8	2	2	-	-	-

ANNEXURE V (4)

No. of Machines/Equipment required, supplied and condition of Machines in each trade:

Name of Trade: Drafts Man, Civil

Sl. No.	Name of the Machine	Condition of Machines/ equipment					and outmoded
		number required	number supplied	working	requiring repairs	irreparable require replacement	
	1	2	3	4	5	6	7
1)	Drawing Instrument Box containing 12 items	32	-	-	-	-	-
2)	Protractor cellulised 6" Semicircular	32	2	2	-	-	-
3)	Scale plotting Box wood 6 metric scales 30 cm Long	32 sets	-	-	-	-	-
4)	Set squares cellulised 2mm thick levelled edges 40%	32	-	-	-	-	-
5)	-do- 30° 10"	32	14	14	-	-	-
6)	Drawing boards 1250mm X 900mm	16	16	16	-	-	-
7)	Teasquare 1250mm	16	32	32	-	-	-
8)	French Curves transparent plastic set	8	-	-	-	-	-
9)	Flexible curves 12"	8	-	-	-	-	-
10)	Radius curve metric	8	-	-	-	-	-
11)	Clinograph wooden	2	-	-	-	-	-
12)	Drafting machine vertical type with board and adjustable table	4	-	-	-	-	-
13)	-do- Horizontal type	4	15	-	-	-	-
14)	Brass parallel rule	8	-	-	-	-	-
15)	Slide rule 10'	8	3	3	-	-	-
16)	Perimeter sliding bar 70cm	2	-	-	-	-	-
17)	Pentograph 24'	2	1	1	-	-	-
18)	Tracing Table with plate Glass	2	-	-	-	-	-

ANNEXURE V (4)

No. of Machines/Equipment required, supplied and
condition of Machines in each trade

Name of Trade: Mechanic Tractor

Sl. No.	Name of the Machine	Condition of Machines/ equipment					old and out moded
		num ber req ui red	num ber sup pli ed	wor king	requ ires repa irs	irrepara ble repa ce ment	
	1	2	3	4	5	6	7
1.	Grinder with two 18 cm wheels with twist drill grinding attachment	-	-	-	-	-	-
2.	Compressor capacity 12c.f t.1	1	1	1	-	-	-
3.	Hydraulic Jack HI-LIFT type	2	2	2	-	-	-
4.	Grawler type tractor fitter etc.,	3	3	3	-	-	-
5.	Wheel type tractor fitted with diesel engine	4	4	2	1	1	-
6.	Training ploughs	1	2	2	-	-	-
7)	Tiller ore cultivator with a mounted disc plough	2	1	1	-	-	-
8)	3 Furrow disc, plugh with scrapers	1	1	1	-	-	-
9)	Rear axle assembly-Gear Box steering box assembly - of the Diesel Engine Tractor	1	1	4	1	-	-
10)	Chain & pully Block one Ton capacity	1	1	1	-	-	-

ANNEXURE IV (4)

No. of Machines/Equipment required, supplied and condition of machines in each trade

Name of Trade: MACHINIST GRINDER

Sl. No.	Name of the Machine	num ber req uired	num ber sup pli ed	Condition of Machines/ equipment			
				wor king	requi res repa irs	irrepara ble rep lacement	old and out moded
	1	2	3	4	5	6	7
1)	Lathe 75 cm between centres 180 cm Centre with complete accessories	4	1	1	-	-	-
2)	Drilling M/C Pillar 0-12 mm capacity	6	1	1	-	-	-
3)	Grinding Machine external cylindrical fully motorised	2	2	2	-	-	-
4)	Grinding machine plain surface, with reciprocating table	2	2	1	1	-	-
5)	Grinding Machine, plain, surface with horizontal and vertical spindles	4	1	1	-	-	-
6)	Tool & Cutter grinding machine of size 250 X 375 mm	8	7	5	2	-	-
7)	180 X 90 X 180 cm lapping machine with motor	3	1	1	-	-	-
8)	Grinding machine universal	3	1	1	-	-	-
9)	Small type honing machine	1	-	-	-	-	-

ANNEXURE V (5)

No. of Machines kept Idle even though in working condition
according to different reasons

Trade	name of the machine	want of electric ty	want of space	concerned craft not taught	out dated parts	want of	oth ers
1	2	3	4	5	6	7	8
1) Fitter	Drilling Machine	2	-	-	-	1	-
2) Turner	1) Power Hackrow machine	1	-	-	-	-	-
	2) Lathes	-	-	-	-	6	-
3) Welder	1) Welding Generator	-	-	-	-	2	-
	2) Welding transformer	-	-	-	-	2	-
4) Pattern maker & carpentary	Bond screw	-	-	-	-	1	-
5) Machinist Grinder	1) Grinding Machine (Cylindrical)	1	-	-	-	-	-
	2) Bench Grinder	-	1	-	-	-	-
6) D. Mechanical	Blue printing machine	-	-	-	1	-	-
7) Electrician	1) Squirrel cage induction motor	1	-	-	-	-	-
	2) Plug cutting machine	-	-	-	-	-	-
	3) D.C. Compound motor	1	-	-	-	-	-
	4) D.C. Generator 7.5. K.W	-	-	-	-	1	-
	5) D.C. Shunt Generator 7.5. K.W.	-	-	-	-	2	-
	6) D.C. Services Motors 2.5 HP	1	-	-	-	-	-
	7) D.C. shunt motor 2.5 HP	1	-	-	-	-	-
	8) Motor Generator 5 H.P. 440 V	1	-	-	-	-	-

Contd. ANNEXURE V (5)

1	2	3	4	5	6	7	8
	9) A.C. slipper ing Induction motor 5 H.P.	1	-	-	-	-	-
	10) 3 Phase trans- former 5 KKW Shell type	1	-	-	-	-	-
	11) A.C. Auto Syn- chronous motor	1	-	-	-	-	-
	12) A.C. Single phase re- pulsion type	-	-	-	-	-	1
Moulder	1) Mix muller sand 13 Kg capacity Twin Roller	-	1	-	-	-	-
	2) Moulding machine	-	1	-	-	-	-
	3) Oil fired furnace	-	1	-	-	-	-
	4) Auto sand riddle with sand 3 tons capacity	-	1	-	-	-	-
	5) cupolo-cup 1½ ton	-	1	-	-	-	-
	6) Pedestral Grin- der D.E.	-	1	-	-	-	-
	7) Core oven	-	1	-	-	-	-
	8) Cuplo torch moulding oil fired	-	1	-	-	-	2

Number of additional machines/equipments required by the I.T.Is. according to different Trades

Trade: Mechanic, Motor Vehicle.

Sl. No.	Name of the Machinery or Equipment	Present Equipment being insufficient	Out of Order	New Technology	Increase in the Students Strength	Required as per standard list but not supplied	
1	2	3	4	5	6	7	8
1)	Air Brake Assembly	1	-	-	-	-	-
2)	Techno Meter	-	-	-	-	1	-
3)	Motor Vehicle (Roadworthy) Petrol Engine	2	-	-	-	1	-
4)	Motor Vehicle 4/6 Cylinder Diesel Engine	2	-	-	-	1	-
5)	Valve Grinding Machine	1	-	-	-	1	-
6)	Motor Cycle 2.5 H.P.	1	-	-	-	1	-
7)	Air Compressor 220 P.S.I.	-	-	-	-	1	-
8)	Tyre Inflation Gauge with 24" Pipe	-	-	-	-	1 Set	-
9)	Wheel Alignment Gauge Set	1	-	-	-	2 Sets	-
10)	Car Washing Machine	-	-	-	-	1	-
11)	Cylinder Boring Machine	-	-	-	-	2	-
12)	Cylinder Honing Machine	-	-	-	-	2	-
13)	Clutch Assembly Jig	-	-	-	-	1	-
14)	Diet Test Indicator	-	-	-	-	1	-
15)	Micro Meter Outside with Extension	-	-	-	-	1	-
16)	Micro Meter Inside -Adjustable Type	-	-	-	-	1	-
17)	Wheel Balancer	-	-	-	-	1	-
18)	Hydraulic Jack 5 Ton	-	-	-	-	1	-
19)	Mechanical Jack Trolley type 10 Ton	-	-	-	-	1	-
20)	Injector Cleaning Kit	-	-	-	-	1	-
21)	Petrol Engine 4/6 Cylinder in running Condition	1	-	-	-	1	-
22)	Box Spanner Set	-	-	-	-	1 Set	-
23)	Ring Spanner Set	-	-	-	-	1 Set	-
24)	D.F.S.Spanner Set	-	-	-	-	1 Set	-
25)	Piston Ring Expander	-	-	-	-	1	-
26)	Piston Ring Compressor	-	-	-	-	1	-
27)	Valve Spring Lifter C' Type	-	-	-	-	1	-
28)	Clutch Finger Height Gauge	-	-	-	-	6	-

1	2	3	4	5	6	7	8
29) Hoses for wheel axils		-	-	-	-	2 Sets	-
30) Valve Seat Cutting Tool		-	-	-	-	1	-
31) Jeep		-	2	-	-	-	-
32) Scooter		-	-	-	-	1	-
33) Spray Painting Gun		-	-	-	-	1	-
34) Spark Plug Tester		1	-	-	-	-	-
35) Brake Lining Revotting		1	-	-	-	-	-
36) Spring Tension Scale		1	-	-	-	-	-
37) Valve Refractor		1	-	-	-	-	-
38) Arbor Press 1/2 Ton Capacity		1	-	-	-	-	-
39) Connecting Rod Aligner		1	-	-	-	-	-

Annexure VI(6)

Number of additional machines/equipments required by the I.T.Is. according to different Trades

Trade: Electrician

Sl. No.	Name of the Machinery or Equipment	Present Equipment being insufficient	Out of Order	New Technology	Increase in the Students Strength	Required as per standard list but not supplied	T D P E S
1	2	3	4	5	6	7	8
1)	Multimeter	-	-	-	-	1	-
2)	Motor Generator Set D.C.7.5 HP A.C.Motor coupled with D.C.Generator	-	-	-	-	4	-
3)	D.C.Motor 3 H.P. Shunt 230 V.	-	-	-	-	4	-
4)	D.C.Motor Shunt Wound 3 H.P.	-	-	-	-	4	-
5)	D.C.Motor Compound Motor	2	-	-	-	4	-
6)	D.C.Generator coupled with alternator 5 K.V. 3 Phase	-	-	-	-	4	-
7)	Series Motor 1 H.P. D.C.with Starter	-	-	-	-	2	-
8)	Post Office Box with Galvanometer	-	-	-	-	4	-
9)	Transformer 5 K.V. Oil Cooled 3 Ph	-	-	1	-	3	-
10)	Transformer Air Cooled Single Phase	-	-	1	-	7	-
11)	Rectifier 30 V.D.C. 30	-	-	-	-	3	-
12)	Battery Charge Unit	-	-	1	-	2	-
13)	Rotary Converter	-	-	-	-	3	-
14)	M.G.Set 5 H.P. 230 V.	-	-	-	-	2	-
15)	Auto Synchronous Motor 3 Phase 5 H.P.	2	1	-	-	1	-
16)	1/2 H.P.A.C.Induction Motor 230 V.	2	-	-	-	2	-
17)	Shaded Pole Induction Motor 1/2 H.P.	-	-	-	-	2	-
18)	A.C.Motor 230 V.50Cycle with Regulator	-	-	-	-	5	-
19)	Slipping Induction Motor 5 H.P.	-	-	-	-	4	-
20)	Induction Motor 5 HP with an automatic Star Delta Starter	-	-	-	-	2	-

1	2	3	4	5	6	7	8
21)	Induction Motor with 3 HP 3 Phase Air Brake	-	-	-	-	4	-
22)	Split Phase Induction Motor 1/2 HP.	-	-	-	-	2	-
23)	Repulsion Type Induction Motor Single Phase 230V	1	-	-	-	2	-
24)	Motor Generator Set A.C. 5 HP Squirrel Cage Induction	-	-	-	-	2	-
25)	Current Transformer	-	-	-	-	2	-
26)	Potential Transformer	2	-	-	-	3	-
27)	D.C. Generator 2.5 K.W.	-	-	-	-	2	-
28)	Motor Universal 230 V. 50 Cycles 1 H.P.	-	-	-	-	3	-
29)	Coil Winding Machine	-	-	-	-	1	-
30)	Mock Lay out of Car	-	-	-	-	1	-
31)	Used D.C. Generator Series, Shunt and Compound Type	-	-	-	-	5	-
32)	Single Phase Dimmer Start 8 Amps.	1	-	-	-	-	-
33)	3 Ohm Meter from 0-02 Ohms to 10,000 Ohms in fine ranges	1	-	-	-	-	-
34)	A.V.O. Meter with AC/ DC Moving Coil In- strument	1	-	-	-	-	-
35)	Phase Sequence Indi- cator	1	-	-	-	-	-
36)	Portable Frequency Meter	1	-	-	-	-	-
37)	Rheostats Wire Wound Sliding and Double Tube	-	-	-	-	2	-
38)	Foam Print D.C. Starter for 3 H.P. 370 V.	-	-	-	-	-	1
39)	Technometer	-	-	-	-	-	1
40)	K.W. Meter 1 K.W.	-	-	-	-	1	-
41)	Stop Watch	-	-	-	-	1	-
42)	Cramping Tool	-	-	-	-	1 Set	-
43)	Wheat Stone Bridge with Galvanometer	-	-	-	-	2	-
44)	Motor Starter	-	-	-	-	1	-

Number of additional machines/equipments Required by the I.T.Is.
according to different Trades

Trade: Instrument Mechanic

Sl. No.	Name of the Machinery or Equipment	Present Equipment being in-sufficient	Out-of Order	New Technology	Increase in the Students Strength	Required at the standard list but not supplied	C T E R S
1)	Buffing Machine 36" Spindle	1	-	-	-	-	-
2)	Electric Furnace	1	-	-	-	-	-
3)	Calinator for testing AC, DC, Ammeter and Volt Meter	4	-	-	-	-	-
4)	Tester for testing Kilowatt meter	4	-	-	-	-	-
5)	Potential Meter	4	-	-	-	-	-
6)	Dead Weight Tester	4	-	-	-	-	-
7)	Microscope Bynacular	4	-	-	-	-	-
8)	Recorder and Controller	6	-	-	-	-	-
9)	Stroboscope	4	-	-	-	-	-

Trade: General Electronics and Radio & Television

1)	0 to 3 Volts/3 Amp. FCIL	32	-	-	-	-	-
2)	0 to 300 Volts/300	8	-	-	-	-	-
3)	Sweep Oscillator FCIL	2	-	-	-	-	-
4)	X-Y Tracer T.V. Analyser	2	-	-	-	-	-
5)	Imported T.V. Analyser	2	-	-	-	-	-
6)	Colour T.V. Receiver FCIL	-	-	2	-	-	-
7)	VIDEO Cassette Recorder B.P.L.	-	-	1	-	-	-
8)	VIDEO Player B.P.L.	-	-	1	-	-	-
9)	Colour/Generator FCIL	-	-	1	-	-	-
10)	Digital Multimeter	-	-	8	-	-	-
11)	Digital Frequency Counter	-	-	2	-	-	-
12)	I/C Trainer Kit AEC Models	-	-	2	-	-	-
13)	Electronic Calculator for Scientific Calculation of Solar Power	-	-	4	-	-	-
14)	Digital Electronic Trainer AEC	-	-	1	-	-	-
15)	N.C. Controlled Drilling Machine	-	-	1	-	-	-
16)	Stereo Deck 20 to 20 W Phillips	-	-	1	-	-	-

Annexure V(6)

Number of additional machines/equipments required by the I.T.Is. according to different Trades

Trade: Mechanic Diesel

Sl. No.	Name of the Machinery or Equipment	Present Equipment being insufficient	Out of Order	New Technology	Increase in the Students Strength	Required as per standard list but not supplied
1	2	3	4	5	6	7
1)	Injector Test Bench	3	-	-	-	-
2)	6 Cylinder Old Engine	3	-	-	-	-
3)	Diesel Engine	1	-	-	-	-
4)	Corborator Cortax Type	2	-	-	-	-
5)	Clutch Unit	2	-	-	-	-
6)	Gear Box	1	-	-	-	-
7)	4/6 Cylinder Diesel Engine in working condition	2	-	-	-	-

Trade: Tailoring, Cutting

1)	Jig-Jag Machine	1	-	-	-	-
2)	Overlocking Machine	1	-	-	-	-
3)	Button hole Machine	1	-	-	-	-
4)	Dummys (Gents, Ladies, Children)	3	-	-	-	-
5)	Button Covering Machine	1	-	-	-	-
6)	Heat Controlled Iron Box	1	-	-	-	-

Trade: Stenography

1)	Foolscap Size Typewriters	10	-	-	-	-
2)	Tape Recorder	-	-	1	-	-

Annexure V(6)

Number of additional machines/equipments required by the I.T.Is.
according to different Trades

Trade: Millwright Mechanic

Sl. No.	Name of the Machinery or Equipment	Present Equipment being insufficient	Out of Order	New Technology	Increase in the Students Strength	Required as per standard list not supplied	C E E S
1)	Shaping Machine 450 MM	-	3	-	-	-	-
2)	Shaping Machine 350 MM Hydraulic	-	4	-	-	-	-
3)	Slotter 180 MM	-	6	-	-	-	-
4)	Lathe general purpose	5	-	-	-	-	-
5)	Tool and Cutter Grinding	4	-	-	-	-	-
6)	H.M.T.Radial Drilling	2	-	-	-	-	-
7)	Sylicon Carbide Grinder	1	-	-	-	-	-
8)	Milling Machine, Universal, Horizontal	-	2	-	-	-	-
9)	Milling Machine, Plane type, Horizontal	4	-	-	-	-	-
10)	Surface Grinding Machine with attachment	1	-	-	-	-	-
11)	Jigbore Machine Stand and Size with attachment	-	-	1	-	-	-
12)	Numerically Controlled Machine Milling	-	-	1	-	-	-
13)	Metal Cutting Bandsaw	-	-	1	-	-	-
14)	Tool Room Lathe	-	-	1	-	-	-

Trade: Sheet Metal Worker

1)	Light general purpose portable	2	-	-	-	-	-
2)	Combination turning up and wiring machine	1	-	-	-	-	-
3)	Tinsmith Bench Floder 24" X 16"	1	-	-	-	-	-
4)	Circular Cutting Machine	1	-	-	-	-	-
5)	Roller type Drilling Machine	1	-	-	-	-	-
6)	Slip-Hole former 16 gauge 36"	1	-	-	-	-	-
7)	Pedestal Grinder	1	-	-	-	-	-

Annexure V(6)

- - - Number of additional machines/equipments required by the I.T.Is.
according to different Trades

Trade: Tool and Die Maker

Sl. No.	Name of the Machinery or Equipment	Present Equipment being insufficient	Out of Order	New Technology	Increase in the Students Strength	Required as per standard list but not supplied	O H E R S
1)	Lathe General purpose with all accessories	1	-	-	-	-	-
2)	Lathe tool room fully equipped with all accessories	2	-	-	-	-	-
3)	Vertical Milling Machine	2	-	-	-	-	-
4)	Bench Grinder	1	-	-	-	-	-
5)	Universal Grinder fully motioned with all accessories	1	-	-	-	-	-
6)	Drilling Machine ()	1	-	-	-	-	-
7)	Portable Hand Grinder	1	-	-	-	-	-
8)	Flexible Hand Grinder 100M	1	-	-	-	-	-
9)	Bandsaw Machine Vertical	1	-	-	-	-	-
10)	Electric Furnace with Motor to handle H.S.I.S.	1	-	-	-	-	-
11)	Fly Press 30 Ton Cap	1	-	-	-	-	-
12)	Power Press 30 Ton Cap	1	-	-	-	-	-
13)	Jig Borer Medium size with Optical Reading and all accessories	1	-	-	-	-	-
14)	Pantograph Machine	1	-	-	-	-	-
15)	Big Filing Machine	1	-	-	-	-	-
16)	Electro testing tank complete with all equipments	1	-	-	-	-	-
17)	Rockwell Hardness Testing Machine	1	-	-	-	-	-
18)	Powersaw/Horizontal Bandsaw	1	-	-	-	-	-

ANNEXURE V (6)

Number of additional machine/equipment required
by I.T.I.'s according to different Trades

TRADE: DRAUGHT'S MAN MECHANICAL

Name of Machinery/equipment	Reasons**						
	1	2	3	4	5	6	7
1) Drafting Machine 42 X 29"	-	-	-	-	-	8	-
2) Adjustable setsquare	-	-	-	-	-	1	-
3) Drawing height stools	26	-	-	-	-	-	-
4) Stand for Blue Printing	1	-	-	-	-	2	-
5) Stencil set complete in box	-	-	-	-	1	-	-
6) Printing Frame 13" X 24"	-	-	-	-	-	2	-
7) Printing Frame 34" X 24"	-	-	-	-	1	1	1
8) Drawing Board Stand	3	-	-	-	-	1	-

ANNEXURE V (6)

Number of additional machine/equipment required by
I.T.I's according to different Trades.

TRADE: FITTER

Name of Machinery/equipment	reasons						
	1	2	3	4	5	6	7
1) Forge portable hand blower	-	-	-	-	-	8	-
2) Grinding Machine	-	-	-	-	-	3	-
3) Electric furnace	1	1	-	-	-	6	-
4) Dial Test Indicator	-	-	-	-	-	2	-
5) Lathe all gear Head stock SSSC	4	-	2	24	8	-	-
6) Pipe vice	-	-	-	-	-	3	-
7) Anvil with stand	-	-	-	-	-	7	-
8) Drilling machine pillar type sensitive	-	-	-	-	-	14	-
9) Drilling machine pillar sensitive bench type	4	-	-	-	-	22	-
10) Slip gauge Johnson	-	-	-	-	-	1	-
11) Telescope gauge	-	-	-	-	-	1	-

- 2 = Present equipment being in sufficient
- 3 = Out of order
- 4 = New Technology
- 5 = Increase in student strength
- 6 = Required as per standard list but not supplied
- 7 = Others.

ANNEXURE V (6)

Number of additional machine/equipment required
by I.T.I.'s according to different Trades.

TRADE: MACHINIST GRINDER

Name of machinery/equipment	Reasons*						
	1	2	3	4	5	6	7
1) Grinding Machine (universal)		2	-	2	4	-	-
2) Hooving Machine		-	-	2	-	-	-
3) Grinding Machine (Cylindrical)		2	-	-	-	2	-
4) Grinding Machine Horizontal		2	-	-	-	1	-

TRADE: WELDER

1) Transformer		6	-	2-	-	-	-
2) Welding Generator		4	-	2	-	-	-
3) Bench sheet		1	-	1	-	-	-
4) Rectifier Set		3	-	2	-	4	-
5) Actylene generator		2	2	-	1	2	-
6) Gas welding machine		-	-	2	1	1	-
7) Spot Welding machine		-	-	1	1	-	-
8) Arc Welding machine		2	-	-	1	1	-
9) Oxygen cutting machine		2	3	-	1	-	-
10) D E Grinder		4	2	-	-	-	1

ANNEXURE V (6)

NO. OF ADDITIONAL MACHINE/EQUIPMENT REQUIRED BY I.T.I's ACCORDING
TO DIFFERENT GRADES.

TRADE: MACHINIST

1)	1	2	3	4	5	6	7
1)	Lathe M & D	2	-	-	6	6	-
2)	Surface Grinding Machine	-	-	2	-	5	-
3)	Bench Grinder	-	-	1	-	5	-
4)	Milling Machine	-	-	1	-	-	-
5)	Drilling machine multiple spindle	2	-	2	-	-	-
6)	Lapping machine	1	-	-	-	-	-
7)	Double column planers	-	-	-	-	1	-
8)	Shaping machine 315/ ^{mm} stroke	-	-	-	-	3	-
9)	Tool and cutter grinder	2	-	-	-	7	-
10)	Radial drilling 1200 mm with tapping attachment	-	-	-	-	5	-
11)	Silican carbide grinder	-	-	-	-	8	-
12)	Gear hobbing machine	-	-	1	-	-	-
13)	Centre less grinder	-	-	1	-	-	-
14)	Brocher or Broching machine	-	-	1	-	-	-
15)	Milling machine universal with attachment	-	-	1	-	1	-
16)	Milling machine No. Zero	-	-	-	-	8	-
17)	Milling machine 1 vertical	-	-	-	-	3	-
18)	Milling machine No. 2	-	-	-	-	2	-
19)	Filing machine	-	-	-	-	2	-
20)	Forge portable hand blower	-	-	-	-	7	-
21)	Anvil 150 kg.	-	-	1	-	4	-
22)	Shaping machine 12" stroke	-	-	-	-	1	-
23)	Shaping machine 20" stroke	-	-	-	-	1	-
24)	Metal cutting bench saw	-	-	-	-	2	-
25)	Planing machine	-	-	-	-	2	-
26)	Slotting machine	-	-	-	-	8	-

Annexure V (6)

Number of additional machine/equipment required by I.E.I's
according to different Trades.

Trade Refrigeration & Air Conditioning E

Name of Machinery/equipment	Reasons						
	1	2	3	4	5	6	7
1. Ice cream cabinet	-	-	-	-	-	1	-
2. Wall in cooler	-	-	-	-	-	1	-
3. Semihermatic compressor	-	-	-	-	-	4	-
4. Centrifugal compressor	-	-	-	-	-	2	-
5. Rotary compressor	-	-	-	-	-	2	-
6. Watercool condenser	-	-	-	-	-	2	-
7. Evaporation type condenser	-	-	-	-	-	1	-
8. Blower unit	-	-	-	-	-	1	-
9. Car Air Conditioner	-	-	-	-	-	1	-
10. Truck refrigerator system	-	-	-	-	-	1	-
11. Thermo couple refrigerator	-	-	-	-	-	2	-
12. Refrigerators different capacity	-	-	-	-	-	2	-
13. Room Air Conditioner	-	-	-	-	-	2	-
14. Open type compressor	-	-	-	-	-	2	-
15. Hermetic compressor	-	-	-	-	-	2	-

Annexure V(6)

Number of additional machine/equipment required by
I.T.I's according to different Trades.

Trade Turner: Name of Machinery/equipment Reasons*

1	2	3	4	5	6	7
1. Parmer lathe	9	-	-	-	-	-
2. Turret lathe	10	-	-	-	1	-
3. Consten lathe	10	-	-	-	-	-
4. M.B.D. Lathe	25	-	-	-	-	-
5. Centre lathe for general purpose Madras Kirloskar	45	-	-	-	20	-
6. General purpose H.M.T.	15	-	-	-	-	-
7. All gearal Head Stock lathe	45	-	2	-	6	-
8. Automatic lathe single spindle	1	-	-	-	-	-
9. Drill grinding machine	3	-	-	-	-	-
10. Pedestal grinder	1	-	-	-	1	-
11. Drilling machine bench type	1	-	-	-	3	-
12. Power saw machine	5	-	-	-	-	-
13. Milling machine	-	-	-	-	1	-
14. Venus supercraft lathe	2	-	-	-	-	-

Annexure V(6)

Number of additional machine/equipment required by
I.T.I's according to different Trades.

Trade: Carpenter & Pattern Maker

Machinery/equipment/Reasons*.

1	2	3	4	5	6	7
1. Bench grinder motorised	1	-	-	-	-	-
2. Disc and hole in sander machine	-	-	-	-	1	-
3. Curicular saw machine/motorise	1	-	-	-	1	-
4. Wood working lathe	1	-	-	-	-	-
5. Wood working band saw	1	-	-	-	-	-
6. Sharpening machine adjustable	-	-	-	-	-	-

Moulder

1) Oil fine furnace	-	-	-	1	-	-
2) Cupola furnace 3/2 ton capacity	1	-	-	-	-	-

Annexure V (7)

Total allotment, expenditure on different items in I.T.I's of Karnataka

Year	Total Expenditure	(Rs in lakhs)							
		Expenditure incurred for purchase of equipments.		Expenditure incurred for repairs		Expenditure incurred for maintenance, salary and other Expenditure.		Expenditure incurred for materials supplied	
		Amt. Rs in lakhs	Perc- centge to Col 2.	Amt Rs in lakh	%to Col.2	Amt Rs in lakhs	% to Col.2	Amt. Rs in lakhs	% to Col.2
1980-81	164.00	8.50	5.18	0.20	0.12	135.75	82.78	19.55	11.92
1981-82	194.07	14.82	7.64	0.20	0.10	157.35	81.08	21.72	11.18
1982-83	224.77	1.24	0.55	0.29	0.13	197.85	88.02	25.39	11.30

Source: - Budget Estimates.

ANNEXURE V (B)

Expenditure incurred for purchase of New equipments for
various Industrial Training Institutes from 1980-81
to 1982-83.

Rs. in lakhs

Sl. No.	Name of the ITIs.	1980.81	1981.82	1982.83
1.	Hosur Road, Bangalore.	4.12	2.83	0.15
2.	SJ.Polytechnic,B'lore(ITC)	-	-	-
3.	I.T.I.Peenya.	-	6.95	0.10
4.	" Bhadravathi.	0.19	0.42	0.10
5.	" Bellary.	0.40	0.32	0.11
6.	" Belgaum.	0.86	0.17	0.10
7.	" Bijapur.	0.16	0.09	0.10
8.	" Bidar.	0.01	0.09	-
9.	" Chickmagalur.	0.26	0.58	0.01
10.	" Davangere.	0.26	0.17	0.01
11.	" Gulbarga.	0.05	0.27	0.10
12.	" Hassan.	0.24	0.10	0.09
13.	" Hubli.	0.24	0.37	0.10
14.	" Honnavar.	0.19	0.16	-
15.	" Karwar.	0.25	0.15	-
16.	" K.G.F.	0.14	0.30	0.09
17.	" Mysore.	0.24	0.75	0.09
18.	" Mandya.	-	0.58	-
19.	" Mangalore.	0.22	0.12	-
20.	" Mercara.	0.27	0.29	0.09
21.	" Raichur.	0.06	0.09	-
22.	" Tumkur.	0.34	0.02	-
	Total.	8.50	14.82	1.2

Annexure V(9)

Availability of teachers for teaching general subjects (subjectwise)

Sl. No.	s u b j e c t	Sanctioned Strength	No. in position	Number vacant
1.	Engineering Drawing	27	20	7
2.	Workshop Calculation and Scheme Science	37	24	13
3.	Mill Unit Supervision	4	2	2
4.	Social Studies	1	-	1
5.	Physical Training Instruction	1	-	1
6.	Allied Training Instructor	2	-	2
7.	Mathematics	2	1	1
8.	Others	8	8	-
9.	Cinema Project Operation	1	1	-
Total		83	56	27

Annexure V (10)

Particulars of facilities like Building, Library, Sports and Hostels

Sl. No.	Details of the facilities	Number
<u>BUILDING FACILITIES</u>		
1.	I.T.Is. having own buildings	14
2.	I.T.Is. having rental buildings	5
3.	I.T.Is. not stated	2
		21
4.	I.T.Is. which are having sufficient accommodation	12
5.	I.T.Is. which require additional accommodation	7
<u>LIBRARY</u>		
1.	I.T.Is. which are equipped with Library	17
2.	I.T.Is. which are not equipped with Library	2
3.	I.T.Is. not stated	2
<u>EXTRA CURRICULAR ACTIVITIES</u>		
(a) 1.	I.T.Is. which are having Indoor Game Facilities	18
2.	I.T.Is. which are not having Indoor Game Facilities	1
3.	I.T.Is. not stated	2
		21
(b) 1.	I.T.Is. which are having fields for out-door games	17
2.	I.T.Is. which are not having fields for outdoor games	2
3.	I.T.Is. not stated	2
4.	I.T.Is. which are having all the equipment for outdoor games	17
5.	I.T.Is. which are not having equipments for outdoor games	2
6.	I.T.Is. not stated	2
7.	I.T.Is. which are having adequate funds	17
8.	I.T.Is. which are not having adequate funds	2
9.	I.T.Is. not stated	2
10.	I.T.Is. which are having separate persons to look after the Sports	2
11.	I.T.Is. which are not having separate persons to look after Sports	19
12.	I.T.Is. not stated	2
13.	I.T.Is. which have made use of available facilities fully	17
14.	I.T.Is. which have not made use of available facilities fully	
15.	I.T.Is. not stated	

Annexure V (10) continued

1	2	3
<u>HOSTEL FACILITIES</u>		
1. I.T.Is. having own hostel facilities		3
2. I.T.Is. having own and private hostel facilities		1
3. I.T.Is. not having hostel facilities		13
4. I.T.Is. having outside facilities		2
5. I.T.Is. not stated		2
		<u>21</u>

Annexure V (11)

Difficulties or bottlenecks faced in the process of purchasing equipments

Sl. No.	Particulars	No. of I.T.Is.
1.	I.T.Is. which faced difficulties in the process of purchasing equipments	6
2.	I.T.Is. which have not faced difficulties in the process of purchasing equipments	11
3.	I.T.Is. not stated	4
		<u>21</u>

Difficulties or bottlenecks faced in the purchase of equipments due to	No. of I.T.Is.
1. Delay in getting sanction	4
2. Short of funds	5
3. Procedural delays	4
4. Non-availability of specified items	4

ANNEXURE - II (1)
Repairs and Maintenance of Machinery and Equipments

Sl. No.	Name of the I.T.I.	Facilities like		Agency	Expenditure incurred on the repairs got done from
		Workshop, trained personnel available for maintenance within the Institution	Workshop, trained personnel available for maintenance outside the Institution		
1	2	3	4	5	6
1)	I.T.I., Hoſſur Road, Bangalore.	No	-	-	-
2)	I.T.I., Tſmſur Road, Bangalore.	No	No	-	-
3)	I.T.I., Mysore.	No	No	-	-
4)	I.T.I., Haſſan.	Yes	No	Only trained personnel, no workshop.	-
5)	I.T.I., Bhadravathi.	Yes	-	-	-
6)	I.T.I., Belgaum.	Yes	-	-	-
7)	I.T.I., Bidſapur.	Yes	-	-	-
8)	I.T.I., Hubli.	Yes	-	-	-
9)	I.T.I., Raichur.	Yes	-	-	-
10)	I.T.I., Coorg.	No	-	-	-
11)	I.T.I., Karwar.	Yes	-	-	-
12)	I.T.I., Mangalore.	No	-	-	-
13)	I.T.I., Honavar.	No	-	-	-
14)	I.T.I., Mandya.	No	-	-	-
15)	I.T.I., Gulbarga.	No	-	-	-
16)	I.T.I., K.G.F.	No	-	-	-
17)	I.T.I., Davanagere.	Yes	-	-	-
18)	I.T.I., Tumkur.	No	-	-	-
19)	I.T.I., Bidar.	No	-	-	-
20)	I.T.I., Ballary.	No	-	-	-
21)	I.T.I., Chikſamagalur.	No	-	-	-

Abstract:

No. of Institutions having facilities within the Institution : 8
 No. of Institutions which are having facilities outside the Institution : -
 No. of Institutions which are not having training facilities : 13
 Total : 21

ANNEXURE - VI(2)

Details of work attended to by the Staff exclusively available for Repairs.

S1. No.	Name of the I.T.I.	Number available	Whether fully trained in Repairs	Was he fully engaged during the year	Was he on leave or vacant during the year	If so, how long	What arrangements made for the repairs	Is the present staff sufficient Yes/No	If not, number required
1	2	3	4	5	6	7	8	9	10
1)	I.T.I., Hassan.	1	Yes	Yes	No	-	-	No	2
2)	I.T.I., Bhadravathi.	4	Yes	On & Off	Yes	-	Alternative staff available	Yes	-
3)	I.T.I., Belgaum.	1	No	Yes	No	-	-	Yes	-
4)	I.T.I., Bijapur.	1	Yes	Yes	No	-	-	No	1
5)	I.T.I., Hubli.	1	Yes	Yes	-	-	-	No	4
6)	I.T.I., Raichur.	1	Yes	Yes	No	-	-	Yes	-
7)	I.T.I., Karwar.	Not stated	-	-	-	-	-	-	-
8)	I.T.I., Lavanagara.	1	Yes	Yes	No	-	-	No	1

Nature of repairs attended

Program of repairs

Was it possible to get the repairs done without affecting training

11 12 13

Mechanical, Overhauling & replacements of parts

Once in a month

Yes

Mechanical & electrical

On & Off

Yes

Minor repairs attended

As and when repairs come

Yes

Maintenance

="

No

Maintenance

once in a month

Yes

Overhauling of Machines, Minor repairs and maintenance

Once in a year

Yes

Breakdown Preventive maintenance, programme etc. when repairs come.

Yes

1										
2										
3										
4										
5										
6										
7										
8										
9										
12)	I.T.I.; Bellary.		Not given							
13)	I.T.I., Chidambalur.									
14)	I.T.I., Kessen.	1	Yes	Teaching of Electronics	Minor Electrical Breakdown	One hour per day	6 Hours per day	One Hour a day		

	Was it possible to get the repairs done the rough them in time (Yes/No)	If No, how long the machines were kept inoperative for want of repairs	Did it affect training (Yes/No)	If yes, what arrangements were made to impart training
10		11	12	13
1)	Yes	-	No	-
2)	Yes	-	No	-
3)	Yes	-	No	-
4)	No	Many months	Yes	-
5)	Yes	-	No	-
6)		-NIL-		
7)		-NIL-		
8)		-NIL-		
9)	Yes	-	No	-
10)	Yes	-	No	-
11)	Yes	-	No	-
12)		-Not given-		
13)		-NIL-		
14)	Yes	-	No	-

ANNEXURE -VI (4)

Availability of funds for ~~purchase~~ repairs of equipments

Sl. No.	Name of the I.T.I.	Was sufficient funds made available	
		Yes	No
1)	I.T.I., Hosur Road, Bangalore.	Yes	-
2)	I.T.I., Tumkur Road, Bangalore.	Not stated	-
3)	I.T.I., Belgaum.	Yes	-
4)	I.T.I., Bidar.	Yes	-
5)	I.T.I., Bijapur.	Yes	-
6)	I.T.I., Bhadravathi.	Yes	-
7)	I.T.I., Chikmagalur.	Yes	-
8)	I.T.I., Gulbarga.	Not stated	-
9)	I.T.I., Hassan.	Yes	-
10)	I.T.I., Hennavar.	-	No
11)	I.T.I., K.S.J.	Not stated	-
12)	I.T.I., Mandya.	Not stated	-
13)	I.T.I., Mysore.	Not stated	-
14)	I.T.I., Mysore.	Yes	-
15)	I.T.I., Hubli.	-	No
16)	I.T.I., Davanagere.	Yes	-
17)	I.T.I., Bellary.	Not stated	-
18)	I.T.I., Raichur.	Yes	-
19)	I.T.I., Karwar.	Yes	-
20)	I.T.I., Tumkur	Yes	-
21)	I.T.I., Mangalore	Not stated	-

Funds are operated by the Head of Account