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AERONAUTICAL RESEARCH LABORATORIES

MELBOURNE, VICTORIA

Engineering Facilities Technical Memorandum 7

TRADE STAFF IN RESEARCH ESTABLISHMENTS A RECENT CASE STUDY

P.H. TOWNSHEND

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SUMMARY

Persistent efforts have been made to introduce a range of additional classifications for tradesmen in research establishments to combat the continually high labour turnover. Recognition has been gained for the introduction of a Laboratory Craftsman category in research establishments in the D.S.T.O. generally. This note calls attention to the critical shortages of skilled tradesmen in a D.S.T.O. laboratory (ARL) and the urgent need for the implementation of a Laboratory Craftsman structure.

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16.Abstract

Persistent efforts have been made to introduce a range of additional classifications for tradesmen in research establishments to combat the continually high labour turnover. Recognition has been gained for the introduction of a Laboratory Craftsman category in research establishments in the D.S.T.O. generally. This note calls attention to the critical shortages of skilled tradesmen in a D.S.T.O. laboratory (ARL) and the urgent need for the implementation of a Laboratory Craftsman structure.

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1. INTRODUCTION

In the early months of 1981 a Technical Memorandum (Ref. 1) was published describing the efforts made over the last twenty years to improve the status and remuneration of Industrial employees in research establishments. The report recommended the introduction of a Laboratory Craftsman structure into the workshops of D.S.T.O. Laboratories.

As a result of the Independent External Review of DSTO, Recommendation No. 23 states:- "The classification of Laboratory Craftsman and Senior Laboratory Craftsman should be introduced into DSTO to provide recognition of merit and performance among employees classed as Industrials". The Government response to this recommendation was:- "The Department of Defence in consultation with the PSB is directed to examine the recommendation, bearing in mind the needs to provide an appropriate environment for innovative science and technology". (Ref. 2).

This note calls further attention to the urgent need for implementation of the above recommendation. It is a recent case study of A.R.L., one of the DSTO Laboratories.

2. REVIEW OF THE CURRENT SITUATION IN A.R.L. WORKSHOPS

The average labour turnover in the ARL workshops 1960-1980 was 30% quoted in Ref. 1. However, the conventional method of assessing labour turnover takes no account of positions which are vacant and remain unfilled. It is therefore necessary to deal with the most affected workshops individually in order to demonstrate the seriousness of the situation as we enter 1982.

2.1 *Machine and Sheetmetal Shops*

The total complement of these shops is fifteen including two senior tradesmen. The labour turnover for 1981 is 80%. There are at present six vacancies for toolmakers.

The situation in this shop has become progressively worse with no indication of improvement - already two of the remaining tradesmen have stated their intention to leave in the New Year. Whereas we have previously been able to augment our dwindling numbers with apprentices on completion of their training, the advent of Traineeships for Technical Officers provides a much greater attraction.

Among the labour turnover of twelve this year we have lost eight of our most valued toolmakers who had up to eight years experience as tradesmen. All of these have taken traineeships as draughtsmen, technical officers or have been engaged by private industry at salaries 20% higher and with improved working conditions. The tradesmen that have been

engaged to replace the losses are at best barely acceptable at the wage rates we are able to pay - they usually stay for 6-9 months and then leave, involving our Personnel Section in excessive paper work, to say nothing of the excessive public money spent on advertising, interviewing and orientation. If we are fortunate enough to recruit tradesmen of acceptable skills they, again, only stay for a short period when they realise the low level of wages is not concomitant with their skills. We rely on experienced toolmakers to provide a source of recruitment for metal model makers - a highly skilled and demanding craft. That source now hardly exists and is unlikely to be re-established with existing wage levels.

2.2 Metal Model Shop

The total complement of this shop is six, one senior model maker and five model makers. The labour turnover for 1981 is 50%.

There are three vacancies for model makers. The senior model maker performs a supervising role and also deputises for the foreman of the Machine Shop because of the loss of two Senior Toolmakers. We are therefore left with two model makers and no prospects of recruiting in these highly skilled positions. If excessive demands are placed on the remaining two model makers, in terms of precision, fine tolerance work, they will probably also leave ARL.

2.3 Instrument Shops

The total complement of the Instrument Shop is twelve. This includes two senior instrument makers. One senior instrument maker and one instrument maker are employed in the plating shop on printed circuit board manufacture. There have been five vacancies in this shop for the last two years. The labour turnover for 1981 is 2 out of a staff of 7, i.e. 29%.

The Instrument Shop is an example of the consequences of advancing technology and the calibre of staff required can hardly be obtained for the rates of pay we are able to offer. Instrument maker apprentices on completion of their training receive $3000/year above our instrument maker rates from private industry.

These examples are typical of the prevailing situation where the demands on the tradesmans skills and craftmanship are inconsistent with the low rates of pay.

It may be argued that the situation will improve as a result of the recent PSB increase (about $25/week) for industrial staff. This increase will make practically no difference to the relativities between our industrial staff and the other competing sources of employment. For

example, the differences in wages between tradesmen at ARL and GAF (Dept. of Industry and Commerce) are maintained continuously as the GAF staff receive Procuctivity Performance Allowance of $14.70/week for work which requires lower levels of skill than that demanded at ARL.

3. SOME TYPICAL CASES

The following situations have arisen during 1981:-

Case 1 - A toolmaker with fifteen years experience receives a skill allowance of $578.00 making his annual salary $13,392. He is promoted to a Senior Toolmaker with 30% of his duties becoming supervisory under a Foreman Grade 'B' receiving $17,461. On promotion to the Senior Toolmaker position the skill allowance is forfeited with the result that an increase of $256.00/year is received, i.e. less than $5.00/week before tax. This is barely an incentive for promotion.

Case 2 - Due to excessive work load in the Wood Model Shop, an urgent task was diverted to the Carpenters Shop. A carpenter was selected to carry out the task, informed of the importance of the task and the need to work to closer tolerances than those to which he was accustomed. He successfully completed the task and the quality of the work was adjudged by the Aerodynamics Division to be highly satisfactory.

During the period of four weeks in which the work was carried out the carpenter was paid Higher Duties as a Wood Model Maker. The difference in his fortnightly pay packet for carrying out this higher standard of work was 29 cents.
(The Carpenters salary is $13,120 including Industry allowance and tool allowance, a Model Maker receives $13,134, i.e. $14/year for the higher skill required.

Case 3 - A Senior Toolmaker vacancy occurred due to the incumbent becoming a Trainee Technical Officer. The applicant selected to fill the vacancy was a Model Maker ($13,134).

On promotion to the senior position his gain in salary was $13/year i.e. 60 cents/week.

Case 4 - The Senior Maintenance Fitter (Leading Hand) is responsible to the Foreman Grade B and acts as his deputy during his absence and when on HDA he receives payment as a Foreman 'C'. The Senior Fitters salary is $13,076. The plumber in the Maintenance section who is responsible to the leading hand receives a salary (including allowances) of $13,895, i.e. $819.00 more than the leading hand who supervises his work.

These cases demonstrate that there is little incentive for the tradesman to develop his trade skills, to seek promotion to senior tradesmen levels or to assume the supervisory responsibilities of a senior tradesman.

An essential element in the advancement of workshop staff to supervisory levels is the continuity of practical experience in the particular workshops, from tradesman to senior tradesman or leading hand to foreman. At present the differential between tradesman and senior tradesman is too small while the differential between senior tradesman and foreman is too high i.e. approx. $3,000/year. The Laboratory Craftsman structure (Fig. 1) provides a gradual transition from tradesman to highly skilled tradesman to supervisory roles as required. This is amplified in Para. 5.

4. EFFECTS OF TRADESMEN SHORTAGES ON APPRENTICE TRAINING

As a result of the shortage of tradesmen recourse is being taken to the use of apprentices as a substitute for tradesmen.

Overall, the seriousness of the tradesmen shortage is masked by the presence of apprentices in training in the workshops. To all appearances we have a fully manned machine shop with all machine tools fully utilised. In fact, we have fourteen apprentices in training and four tradesmen. The recommended tradesmen/apprentice ratio is 3:1.

As a result the practical training received by the apprentices falls short of acceptable standards and the apprentices are used to perform work which should be done by experienced tradesmen. The quality of the work suffers and jobs take longer to complete. The A.R.L. apprentice training scheme was originally introduced to provide a source of skilled tradesmen for the A.R.L. workshops. This year (1982) there will be six apprentices completing their training and not one will be entering the workshops as a tradesman. Five will be taking Technical Officer Traineeships and one will be a university technical officer. By the time the apprentice has completed his four years training in the workshops, he is substantially aware of the anomalies confronting the tradesman. It is not unreasonable to expect that we should be able to offer a worthwhile career to apprentices aspiring to become highly skilled tradesmen, a career with conditions competitive with those of private industry or the Technical Officer grades.

5. THE LABORATORY CRAFTSMEN SOLUTION

The introduction of a Laboratory Craftsman structure seems the most effective solution to the critical shortage of tradesmen in the ARL Workshops. What is required is a complete structure with Foremen as Supervising Laboratory Craftsmen and provision for highly skilled tradesmen

to advance to a level equivalent to Tech. Officer 2 based on skill and versatility alone without any supervisory component in their duties.

In this way all the tradesmen are graded as Laboratory Craftsmen and have the opportunity to advance from the lowest levels of Laboratory Craftsman 1 and 2 (for tradesmen with basic indentured apprenticeship qualifications) to Senior Laboratory Craftsman 4 or 5 for exceptional skills, versatility and experience in the more demanding areas such as Wood and Metal Model Making, Electronic Instrument Making and N.C. machining. The DSTO would thus have a cohesive trades organisation in which tradesmen, on merit, would be paid at higher than normal trade levels, the anomalies mentioned in Para. 3 would be eliminated and versatility would enable flexible deployment of personnel to areas of urgent need.

Salary scales as at 1/1/82 are shown in Fig. 1. The figure also shows the manner in which Laboratory Craftsmen pay scales overlap with Tradesmen and Technical Officer scales.

6. CONCLUSIONS

The losses of skilled tradesmen from the ARL Workshops have continued through 1981 with little success in recruiting suitable replacements. Little relief has been obtained from apprentices completing their training and the situation has been exacerbated by the availability of Technical Officer Traineeships. With the loss of eight toolmakers from the Machine Shop in 1981 and no prospect of suitable replacements, the situation would be desperate if it were not for apprentices. The same conditions prevail in the Instrument Shop. The misuse of apprentices as diluted labour is contrary to the principles of apprentice training.

The standards of workshop support to the Research Divisions at ARL continue to decline. The shortage of skilled tradesmen is now critical. Serious delays will occur in the fulfilment of ARL's research and development tasks for Defence as a result.

It has been pointed out that a new grading structure for tradesmen is required; a structure that is based on modern standards, equipment, skills, and technology. The Laboratory Craftsmen classification provides such a structure.

7. ACKNOWLEDGEMENT

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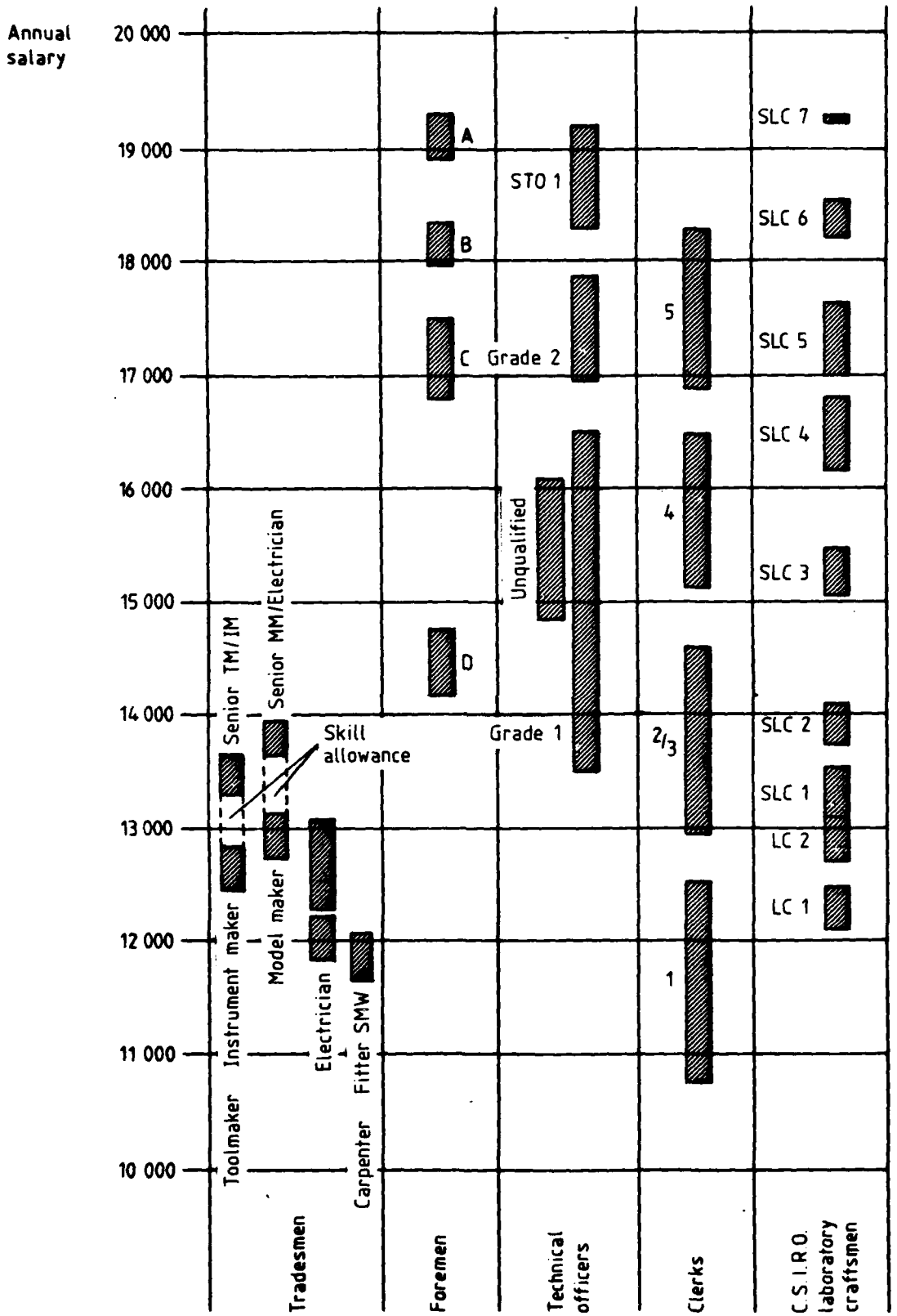
REFERENCES

1. TOWNSHEND, P.H.
   Trade Staff in Research Establishments.
   Aeronautical Research Laboratories, Engineering Facilities
   Technical Memorandum 6. February 1981.

2. Defence Press Release. Department of Defence, Canberra.
   Report of Independent External Review. P.9 No. 156/81.



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