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IN-DEPTH EVALUATION OF RAILWAY  
IN-PLANT GROUP TRAINING PROGRAMMES  
ORGANIZED BY UNIDO IN CO-OPERATION  
WITH THE GOVERNMENT OF THE UNITED KINGDOM

US/GLO/92/078

Evaluation Report\*

Prepared by  
Evaluation Staff  
Office of the Director-General

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\* This document has not been edited.

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Kayle

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**Abbreviations**

<b>ENR</b>	<b>Egyptian National Railways</b>
<b>HTO</b>	<b>Host Training Organization</b>
<b>NORAD</b>	<b>Norwegian Agency for International Development</b>
<b>PCBs</b>	<b>Printed Circuit Boards</b>
<b>QC</b>	<b>Quality Control</b>
<b>SIDA</b>	<b>Swedish International Development Agency</b>
<b>UCD</b>	<b>UNIDO Country Director</b>
<b>RES. REP.</b>	<b>UNDP Resident Representative</b>

## **CHAPTER 1**

### **SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS**

#### **Conclusions**

##### **Impact**

1. Both series of programmes have been successful, in that they have had a notable and beneficial impact on the participants. This impact takes three forms:

- a) Acquisition of identifiable and discrete skills and knowledge in technical and professional areas;
- b) acquisition of personal attributes such as "management leadership" and "self-confidence" etc.,
- c) broadened professional and personal experience, reinforcing theoretical knowledge and raising professional ambitions and standards.

2. However, because of the inertia in the organization of the individual African Railways, the immediate impact on the participants' railways has so far been slight. Nevertheless, some participants have made use of specific information acquired through the programmes, and theoretically, the railways could benefit from higher standards of work. Moreover, the programmes may have greater impact on participants railways if and when development or investment programmes come to be undertaken.

3. A major secondary benefit which was important and greatly appreciated by the participants was the opportunity to discuss important technical aspects with their opposite numbers from other countries. Although this outcome cannot in itself justify the programmes, it presumably underlies the specific technical purpose of all UNIDO's international group training programmes.

##### **Design weakness**

4. Both series of programmes were very well conducted but project objectives were deficient, this because organisational needs of the railways were not defined in advance. It has thus been possible for the programmes, excellent in themselves, to be developed over the years without reference to external needs. UNIDO's control procedure for technical cooperation projects, exercised through project documents, is not effective for these or other group training programmes.

##### **Aspects of programme content**

5. The design weakness is reflected in certain aspects of programme content. It is doubtful that 'personal development' subjects, valuable as they are in themselves, should form part of international railway engineering programmes.

6. Regarding technical content, there were divergent interests within groups, especially on the track programmes. The rolling-stock programmes overcame this problem by means of individual project work, but it ran deeper in the track programme and it was even questioned by some former participants whether the U.K. is a suitable host country.

**Language**

7. Some Arabic-speaking participants had difficulty with the English language. The certification question is an old one but is being tackled at least in Cairo by UNDP.

**African phases**

8. The four-week periods in Africa were invaluable, giving a greater sense of reality to the programmes. They were best exploited by group project work, as in the track and rolling-stock rehabilitation programmes.

**Selection**

9. Participants were reasonably homogeneous in technical standard, but had a wide range of responsibility. No women took part in the programmes, railway engineering being a masculine preserve.

**Administration**

10. Programmes were almost entirely administered by the HTOs. Functions carried out by UNIDO were criticised by the HTOs, perhaps too severely, but there indeed seems to be room for improvement. HTOs took great pains to take care of programme participants.

**Documentation and vocabulary**

11. The aide-mémoire and 'Note for Participants' are not always clear and are not well presented. The aide-mémoire is unsuitable in title, form and content as a programme prospectus. It could be drafted more carefully and could usefully explain key words in order to avert misunderstandings.

**Roles of the organisations concerned**

12. Responsibilities of UNIDO, UAR, ODA and HTOs are not clear, and the effectiveness of the programmes has thus been diminished. The ODA did not consider pre-investment in training needs assessment necessary, nor did UNIDO insist on such a study. Given the great variety of African railways it would have been difficult to identify common requirements, but an enquiry would have assured more precisely directed assistance. The needs assessment mission which preceded the first track course was intended to establish the content of an already determined programme, a much later step than the initial assessment required.

13. ODA and UAR representatives have attended evaluation sessions, and meetings in Vienna between programmes. They have contributed to programme evolution within the basic structure.

14. UNIDO, having no in-house railway engineering expertise, has played a limited role, further reduced as HTOs have taken over much administrative support. UNDP and UNIDO offices in African host countries were not called upon to assist with programme arrangements. UNIDO's IHRD Branch established training objectives for the later track programmes and may have influenced the training objectives of the rolling-stock programmes.

15. No contracts have been concluded between UNIDO and the HTOs, an undesirable omission.

**Transfer of railway engineering training to Africa**

16. There should be no requirement for 'personal development' subjects to form part of international programmes. Furthermore, some engineering and management subjects could be covered in Africa. The latter could well be reinforced by study tours outside Africa. For technical content visits to manufacturers and users of unfamiliar technology will always be invaluable.

17. Temporary inputs from outside Africa might assist in building up African railway training capacity. The two British HTOs could play an important role here. Alternative programme structures could also be considered, perhaps with a higher proportion of time in Africa. The benefits of an international mix of participants should not be ignored.

18. It may be more productive if Arabic were the working language for some programmes.

19. Decisions in these respects should follow assessment of training and development needs in African railways.

### **Recommendations**

#### **UNIDO and railway engineering**

##### **Recommendation 1**

20. The decision to promote and backstop additional programmes of this kind, where UNIDO is not in a position to provide full substantive support, and which are not connected or in support of larger technical assistance programmes in the subjects covered, should be carefully weighed. With respect to the ongoing programmes, the next step should be a careful analysis of the components of the programmes already run in order to establish where UNIDO could make a greater technical or professional contribution to railway engineering than has previously been the case.

21. For example within the general area of rolling-stock rehabilitation *feasibility studies* are the essential first step. While the programmes run hitherto have mainly dealt with technical feasibility it is more than possible that UNIDO could greatly strengthen the capability of African (or other) railway engineers and managers to assess the economic feasibility of rehabilitation programmes.

22. Similarly the actual implementation of rolling-stock rehabilitation can be made more efficient by the application of general principles of *production management* and here again UNIDO might be in a good position to make a contribution from its expertise in this area. Workshop layout and organisation, cost accounting and quality assurance might be components of programmes in this area.

23. Other areas might include (a) maintenance and parts management and (b) training management and methodology. This latter subject might be combined with an organisational development to form a more comprehensive human resource development programme.

24. The maintenance and repair of railway track and of bridges and structures is not a subject so readily related to UNIDO areas of professional interest, being largely a matter of highly specialised civil engineering. However the subject should be given further study within the context of the recommended analysis.

##### **Recommendation 2**

25. UNIDO should, in collaboration with the Union of African Railways as well as the Southern Africa Transport and Communication Commission and other sub-regional railway

organisations (and if thought desirable the equivalent organisations in other continents), design a study of railway training and consultancy needs in UNIDO's areas of expertise. The study should not necessarily be confined to one language area.

26. Funding of the study should be sought from multilateral sources (e.g. UNDP/TSS1) or bilateral donors. The possibility of funding from industry sources should be examined.

### Recommendation 3

27. If the two preceding recommendations are accepted it will be necessary for UNIDO to designate an official or unit to become fully informed about the world's railways, to establish contacts, and to act as the focal point within the organisation.

### UNIDO and group training programmes

#### Recommendation 4

28. UNIDO should re-examine and codify the rules and procedures for the administration of group training programmes. In particular contracts should be established between UNIDO and host training organisations as a normal practice.

29. UNIDO should assure the efficiency of its own systems and should not delegate administrative functions to host training organisations. Internal systems for obtaining authorisations, distribution of papers, and issue of air tickets should be re-examined and made more responsive to operational needs. In this context the distribution of documents to recipient countries and to potential and selected participants should be given detailed attention.

30. The design and content of the "aide-mémoire" should be examined in detail and revised in accordance with their function as a programme prospectus. Other widely distributed documents such as "Notes for Participants" should similarly be brought up to high standards of accuracy and presentation.

#### Recommendation 5

31. Project documents and their internal structure should be used to assure good training programme design, not simply as a formal procedure.

### ODA

#### Recommendation 6

32. If the development of African railways has a high enough priority to attract funding the ODA may wish to sponsor a project to assess the HRD needs of railway organisations, including training needs, and to identify those which can best be met by means of international programmes. A sub-regional approach may be considered preferable.

### Union of African Railways

#### Recommendation 7

33. The UAR should develop its own capacity to assess the HRD requirements, including training needs, of its member railways, seeking international assistance if necessary.



**Recommendation 8**

34. Subject to the agreement of its members the UAR should take the lead, or collaborate, in the HRD needs assessment projects proposed in Recommendations 2 and 6. The support and collaboration of sub-regional organisations such as the SATCC and the Southern African General Managers' Conference should be enlisted.

**Recommendation 9**

35. The UAR should identify training and development organisations in Africa which can effectively provide services to member railways, whether or not these organisations are specialised in railway training, and should circulate information. If the need arises the UAR should itself commission special programmes at some of these organisations.

36. The UAR should discuss with member railways the feasibility, advantages and costs of training programmes run in Arabic, and perhaps in further languages other than French and English, and should make proposals accordingly.

**Host Training Organisations****Recommendation 10**

37. It will be to the benefit of African railways if the professional competence and experience of ABB Transportation Ltd (formerly BREL) and Transmark Ltd continue to be made available and used. The two companies will rightly pursue their own operational and commercial priorities but should preferably take active measures to offer their training service to African railways whenever feasible. In this connection they may wish to develop and propose alternative options, for instance with shorter and more specialised modules for more exactly defined participants, or including study tours in more than one country.

**CHAPTER 2****BACKGROUND TO THE EVALUATION**

38. The decision to evaluate the two series of programmes was taken by the British Overseas Development Administration (ODA), who requested UNIDO to undertake the evaluation, during a meeting (held on 11 May 1992) between the ODA and UNIDO Evaluation Staff.

39. The objective of the evaluation is threefold. Firstly, to enable UNIDO, the Government of the UK, and the host training organizations to take decisions on improving the efficiency and effectiveness of the group training programmes in transferring relevant knowledge and skills to developing countries, in the field of railways. Secondly, to assess the actual impact so far, of the two series of programmes, whose origin, history, and evolution are described below. Thirdly, to comment on the possibility of undertaking these courses wholly in African training centres.

40. The effort and time that have gone into organizing these programmes, as well as other relevant resources, are immense. It is therefore the consensus of all concerned that an in-depth evaluation is in order.

41. Although not directly related, it should be mentioned here that the decision to undertake the in-depth evaluation coincides with the interruption of the UK contribution to the IDF fund.

### CHAPTER 3 DESIGN AND DOCUMENTATION

#### Origins of the programmes

42. The training programmes were initiated soon after the establishment of the Union of African Railways (UAR), by the first Secretary General. Upon request by the UAR, UNIDO launched a series of training programmes in 1971, in the field of maintenance of railway equipment (rolling stock), within the framework of its in-plant group training programmes. Initially, only three programmes were organized, and were for English-speaking participants. These programmes were financed by the German government as contribution in kind. The programmes were largely thought to be useful since one of the most important constraint facing many African railways is the lack of engineers and technicians in the field of maintenance and repair. Furthermore, it was felt that the LDCs would benefit the most from the programmes. Therefore, similar in-plant group training programmes were organized for French-speaking countries from 1976 in Belgium by "Société National des chemins de Fer Belges".

43. At the 8th session of the UAR, held in Douala in October 1980, there was demand for the reinstatement of the programmes for English-speaking countries. UNIDO then put forward a project proposal which was negotiated and approved for financing by the British government under the UNIDO IDF fund

44. In the early 1980s, British Railways Board were approached by representatives of the Overseas Development Administration (O.D.A.), and the British Council T.E.T.O.C. branch (later transferred to the O.D.A.), requesting that the then British Rail Engineering Limited provide a Training programme for African Railways on the subject of Railway Rolling Stock Maintenance. The training was to be provided on behalf of UNIDO.

45. The French speaking programmes, now run by the Belgium Railways "TRANSURB" organization, were said to be very successful, and UAR requested that the English speaking version should be identical in content and duration.

46. The first two programmes were held in the UK only. Following review of resultant outputs, it was concluded that running the programmes solely in the UK, severely limited the overall quality of the programmes and did not allow for important learning consolidation stage. It was therefore decided that commencing with the 1986 programme, provision for a four week period of controlled experience and consolidation training in an African railway should be made. Subsequently, the 1986 and the 1987 programmes were conducted in Derby UK, and Kenya Railways. Based on the experience of the 1986 programme, it was agreed that future programmes should follow a two year pattern of venues for the African portion. It was believed that this would enable the preparation work and costs involved in preparing the African railway training centre concerned to be suitable for such an international course, to be justified. An additional idea was also to set tasks for the host African railway training managers and trainers during the first year, for action prior to the return of the UK professional trainers with the second year UNIDO programme, thus helping to develop the professionalism of the training staff of the host African railway. Evaluation of application of skills and techniques learned by participants from the host railway could also be ascertained. In 1988, the African segment of the programme was held at the Egyptian Railways Training Centre at Wardan, as was the 1989 programme, which was the first programme dealing with the management of rehabilitation of railway rolling stock. 1990 saw the first, and so far the only training programme to be held at Malawi Railways Training Centre at Limbe, for the four week African segment.

47. Experience gained from the first four programmes, i.e. 1984 to 1987 inclusive, suggested that the emphasis should shift from a purely "technical engineering" bias to include management and trainer skills, with particular emphasis on human resource management, training and development in order to equip participants with skills required to pass on to others what they had learned.

48. Following a detailed post course evaluation meeting held at UNIDO, Vienna in the Autumn of 1988 attended by UAR, UNIDO, ODA representatives, and the Programme Director, it was decided that a completely new training programme should be developed for 1989, entitled "The Management of Rehabilitation of Railway Rolling Stock". This was intended to reflect conclusions drawn at the World Bank funded meeting of senior civil servants and railway officers from twenty-one African countries, held in Brazzaville, where the need for rehabilitating existing resources was seen as the way forward for Africa's cash starved railways. The training of managers in the requirements and techniques of rolling stock rehabilitation was therefore identified as an urgent training need, and fundamental to the acceptance within African Railways of rehabilitation as a viable alternative to "buying new".

49. A summary of programmes provided for African railways in this specific area to date is as follows:

Year	Title	Venue	Duration(wks)
1984	I.P.G.T.F. in Maintenance and Repair of Railway Rolling Stock	UK	11
1985	- Ditto -	UK	11
1986	- Ditto -	UK/Kenya	11
1987	- Ditto -	UK/Kenya	12
1988	I.P.G.T.P. in the Management of the Maintenance and Repair of Rolling stock	UK/Egypt	12
1989	I.P.G.T.P. in the Management of the Rehabilitation of Railway Rolling Stock	UK/Egypt	12
1990	- Ditto -	UK/Malawi	14

50. In 1988 the UAR requested a second series of programmes for the management of the maintenance of railway track (referred to as "permanent way"), for railway civil engineers, which would upgrade their skills, thereby improving permanent way maintenance and renewal, which would in turn lead to better efficiency and utilization. The aim of the programme is to upgrade the participants' theoretical and practical knowledge in modern techniques of civil engineering, especially the maintenance of track. The assumption being that at the end of the course, the participants will be better equipped to undertake the following:

- design, plan, implement, and monitor permanent way maintenance programmes.

- more effectively utilize manpower engaged in permanent way.
- carry out projects of rehabilitation of permanent way.
- investigate causes of derailment and deal with emergency situations.
- impart such knowledge to others.

51. A summary of programmes provided for African railways in this area is as follows:

Year	Title	Venue	
1988	I.P.G.T.P. for Engineers responsible for the management of the maintenance and Repair of Railway Track.	UK/Kenya	12
1989	- Ditto -	UK//Kenya	12
1990	- Ditto -	UK/Egypt	12
1992	- Ditto -	UK/Malawi	12

52. It is evident from the foregoing that the effort and time that have gone into organizing these programmes, as well as other relevant resources, are immense. As has been stated above, It is therefore the consensus of all concerned that an in-depth evaluation is in order.

#### Needs analysis

53. As indicated, the current series of English-language rolling-stock programmes was requested as a complement to the French-language programme which had been run for some years. The evaluation team does not know whether a specific analysis of the organizational training needs of railways in anglophone Africa had been undertaken before the request was made; certainly no such analysis was made by UNIDO. It is similarly clear that no subsequent analysis was made of the training needs, either by UNIDO or by the UAR, of the engineers who were to comprise the target group. There seems instead to have been a generalized assumption that since much rolling-stock was in poor shape a training programme for engineers would help to rectify the situation.

54. A similar line of thought appears to lie behind the origin of the track programmes: track was in poor shape in many places, adversely affecting the safety and reliability of rail services, or needed upgrading to permit the operation of heavier and faster rolling-stock. Training of engineers was therefore necessary. After the basic decision had been made to run the first of these programmes, and indeed after the duration and two-country structure of the programme had been established, a one-month "needs identification" mission was carried out in four African countries by the already identified HTO. This mission provided invaluable guidance to programme design in terms of content, but as will be seen below it was some time before training objectives were clearly defined.

55. Both the British HTOs concerned in these series of programmes maintain regular contact with many African railways in connection with other contracts and thus have up-to-date and detailed information concerning their technical status and development plans. Although these contacts do not extend to all the anglophone countries, and are not always focussed on the training of engineers as are the UNIDO programmes, they are sufficient to give the HTOs a sound basis

on which to build up programme structure and content. It would have greatly reinforced the position of the HTOs if more detailed consideration had been given to the organizational plans and consequential training requirements of the various railways. On the face of it this preparatory phase should have been undertaken by UNIDO as executing agency, and the ODA might well have provided for such preliminary assistance. Although the HTOs would be in an excellent position to advise on or undertake a preliminary phase it has never been implicit in their duties as sub-contractors to ensure adequate linkage between the programmes and the organizational needs of participants' railways<sup>1</sup>. The role of UNIDO, which has no in-house professional expertise in railways nor any experience in the transport sector, in executing these programmes is however equivocal. This matter inevitably comes up at various points in this report and is dealt with in summary under 'Conclusions'.

### Target participants

56. In an attempt to assess the underlying purpose of the two series of programmes the evaluation team has examined the intended participants' profiles in the aide-mémoire, which is really the public programme prospectus, and in the project documents. The aspect of interest is not the education, in terms of a degree in engineering, or professional experience required of candidates, but their organizational position and responsibilities.

57. Regarding the rolling-stock programmes the aide-mémoire of the first programme refers to "railway equipment engineers" who "should currently hold technical or supervisory responsibilities related to railway repair and maintenance". This target remains unchanged for the following three years. For the fifth programme, the title of which is management of maintenance and repair for the first and only time, and in the content of which greater emphasis is indeed placed on management, the aide-mémoire simply refers to "railway engineers" who "should currently hold technical or management responsibilities". (It is to be noted that management responsibilities are only an option.) In the following year, which marks the start of the new series of rehabilitation programmes, the target is exactly the same. For the second rehabilitation programme, in 1990, the last African programme so far, the railway engineers "should have a minimum of five years' management responsibilities and should have long experience in the field of rolling-stock maintenance and repair"; but current management responsibilities are not specified. (They could have moved to research, or to some other important but non-maintenance role, well before they apply for the UNIDO programme.)

58. In the immediate objectives of the first (1984) project document the proposed participants are described as "railway engineers who are involved in the maintenance and repair of locomotives, carriages and wagons and who have the managerial responsibility for improving the performance of their depots and main works." The evaluation team has added this underlining, because we here have the only specification of responsibility for improved performance in any of the documents under consideration. It occurs only in an internal document, not in the same year's aide-mémoire, and does not survive even to the following year, where the phrase in the immediate objectives is simply "railway managers and engineers responsible for the maintenance and repair." This is used again in the following four project documents, and it is questionable whether, with its reference to managers, it accurately matches the target in the aide-mémoire for the first four programmes. In the first rehabilitation programme the project document refers even more baldly to "railway managers and engineers responsible for rolling stock"; and in the 1990 project document, in which the term "Profile of candidates" is used for the first time, the same requirements for experience are given as in the aide-mémoire. This is in fact the first occasion on which the two documents coincide.

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<sup>1</sup> In fact, as the evaluation team was surprised to learn, no formal contracts are concluded between UNIDO and the HTOs, whose duties are thus left formally undefined. This point is pursued in Chapter 4, 'Implementation'.

59. As to the track programmes, the first (1988) aide-mémoire refers to "middle/senior engineers" with "minimum of three years' experience as civil engineers in a railway environment or seven years' experience in the position of high-level technician." Preference will be given to applicants with "experience in the field of track maintenance and repair." The subsequent three aide-mémoire use the same specification with the addition of "a good level of responsibility; it is expected that participants will have a good potential for further promotion".

60. The four project documents use the same terms as the aide-mémoire except that the "good level of responsibility" is used from the first. But what level of responsibility is "good"? The meaning of the word cannot possibly be stretched to imply responsibility for performance improvement.

61. Taking all these specifications together, a requirement that participants should be, at the time of the programme or in some quite near future, in an organizational position to introduce changes is not mentioned, except in the first rolling-stock project document. This seems to the evaluation team to be a crucial omission which has allowed the programmes to be designed and executed without clear focus on the real needs and plans of the African railways concerned, and with correspondingly too much attention to the immediate technical preoccupations of the participants. Other aspects of project design contribute to this lack of clarity and these are dealt with in the following section.

62. Meanwhile it can be argued on at least four grounds that lack of precision in specifying the target groups does not matter, or even that it is desirable. (1) It is the responsibility of the various African railways, not of the programme sponsors or organizers, to nominate candidates only when they will be able to make direct use of knowledge and skills acquired within a reasonably near future in the context of wider development or rehabilitation programmes. This assumes that the railway organizations will deny themselves free training places if no such opportunity exists or is in prospect. (2) Too few potential candidates, in all the railways together, are or will shortly be working in positions which allow or require the introduction of change. If this condition is too rigorously applied it might turn out that not even one programme is viable, never mind a series. This argument for looser target specification can however be turned round to call in question the very purpose of the programmes. (3) There are many contingent benefits which participants and their organizations can and do derive from group training programmes, sometimes from single, short observations, sometimes from the experience as a whole. Sometimes these may consist of quite small technical or procedural changes; or they may be personal, harder to identify or describe: changes in attitude, perhaps, or upward revision of technical standards. (4) Project documents are ex-post internal UNIDO formalities required for accounting purposes, not the starting points which identify the original need for a training programme; so long as they meet the formal requirements it does not matter much what details they include or omit.

63. Valid as these arguments may be, they are surely supplementary. That is to say they cannot be used on their own to justify rather loosely drawn target specifications. The original position, if the application of resources to such programmes is to be justified, must be more rigorous: participants must have a very good chance of making a successful contribution to improved performance in their railways, and this should be spelled out at least in the aide-mémoire. The function and content of the project document is considered next.

### Project design

64. Project documents, as stated above, do not, in the case of GTPs, define the need for training programmes; each is written after the decision to run a programme has been taken. They are not subsequently used as control mechanisms as they often and effectively are used in more usual technical assistance projects which take place in a single recipient country. Nonetheless the evaluation team has looked at the objectives set out in the eleven project documents concerned, the outputs (the trained engineers), the link between outputs and objectives, and the assumptions

(not in fact explicit in any of the documents). The possibility of devising meaningful indicators of achievement is also considered briefly. It appears in the end that the project document, or some version of it specially designed for GTPs, could be much more useful than is the case at present. In particular it could give warning at an early stage if achievement of objectives were in doubt.

### Project objectives

65. The original 1984 objectives were as follows:

#### A. Development objective

... to assist recipient countries in improving the transport system by having rolling stock, through improved maintenance systems and practices, in better working conditions, thus assisting all sectors of economy of the countries.

#### B. Immediate objective

... to give railway engineers who are involved in the maintenance and repair of locomotives, carriages and wagons and who have the managerial responsibility for improving the performance of their depots and main works, the opportunity to deepen their theoretical and practical knowledge of rolling-stock maintenance and repair.

66. In 1985 the development objective was unchanged; the immediate objective was amended to read:

#### B. Immediate objective

...to upgrade the skills and knowledge of managers and engineers responsible for the maintenance and repair.

Both development and immediate objectives remained unchanged for the following two years.

67. In 1988, when "management" was added to the programme title, only minor modifications were made to the objectives. The last phrase of the development objective was changed to "thus assisting all sectors of economy in general and industry in particular".<sup>2</sup> An additional phrase is added to the immediate objective, with disregard of normal English syntax: "... and to learn how to impart their knowledge to others."

68. With the change to the rehabilitation programmes in 1989 objectives are substantially changed:

#### A. Development objective

... to assist recipient countries in improving their transport system by extending the economic working life of railway rolling stock in general and industry in particular. (Sic. It seems likely that a line of text has been omitted.)

#### B. Immediate objective

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<sup>2</sup>It is not clear why a need to emphasize the relevance of railways to industry seems to have emerged at this stage. Elsewhere in project documents it is pointed out that railways are used for the transport of industrial goods.



... to upgrade the skills and knowledge of railway managers and engineers responsible for rolling stock so that they can undertake rehabilitation projects and to learn how to impart their knowledge to others.

69. For the most recent rolling-stock programme for Africa, in 1990, both these objectives are dropped. Development objectives for group training programmes were indeed no longer required by this date. The immediate objective has simply become the training objective: "At the end of the programme the trainees will be able to..." This is set out in full under "Training objectives and their evolution" below.

70. The point to be noted about these immediate objectives is that none of them make any reference to application of the skills and knowledge acquired by participants. It would be such application which formed an otherwise missing link with the development objective. Even without a development objective it needed to be spelled out that the knowledge and skills acquired are to be applied for the benefit of their organizations.

71. In contrast, the objectives of the four track projects do all refer to application throughout. In 1988 both kinds of objective are still set out:

#### 1. Development objective

... to assist recipient countries in improving the transport system by having railway track through improved maintenance systems and practices, in better working conditions, thus assisting all sectors of economy in general and industry in particular.

This objective is of course the same as that for the rolling-stock programmes with the word "track" instead of "rolling stock".

#### 2. Immediate objective

To enable participants to improve their knowledge and skills and to apply their improved knowledge in design and maintenance in relation to their current jobs and likely future responsibilities in railway track.

To assist the English-speaking African railway administrations to meet their corporate strategies in the field of civil engineering.

72. In 1989 and 1990 the development objective was dropped and the immediate objective remained unchanged, with the new title "Project Objective". For the 1992 programme the project objective is further reduced:

The application of the skills and knowledge obtained by the participants will lead to improved railways track maintenance.

In the view of the evaluation team this is exactly the kind of clear and simple objective which this group training programme needs (with due attention to the use of English and to proof-reading). The objective of its brother programme for rolling stock would benefit greatly from similar clarity and simplicity. What both objectives also need is the support of assumptions, i.e. the conditions in which the objective can be achieved, including the provision of inputs other than training; and indicators, some means of measuring the achievement of objectives or progress towards them.

#### Assumptions and indicators

73. None of the project documents contain assumptions. It has become clear from meetings with former participants that the introduction of improved technical or managerial procedures can be, and often is, hampered by the lack of other necessary inputs, namely equipment, materials and

initial finance (required even if cost savings are expected quickly) on the one hand; and on the other hand by lack of any relevant corporate objectives or strategy (as assumed to exist in one version of the project objectives), or even departmental objectives or strategy, or simply by lack of commitment from managers more senior than the participants. It would be wise for some such assumptions to be included in project documents in order to clarify what the training programmes on their own can and cannot be expected to achieve.

74. Neither do the project documents contain indicators. The evaluation team is indebted to Mr Kelsall, Programme Director of the rolling-stock programme, for the following possible "success measurement criteria" as he terms them.

- .Reduction in staff numbers
- .More flexible working practices
- .Improved vehicle availability
- .Introduction of improved management techniques
- .Improved quality
- .Improvements in financial costs
- .Introduction of training
- .The introduction of Change Management practices.

It should be emphasized that this list is not necessarily exhaustive, nor are all the indicators always going to be applicable to a single railway. They do however constitute clear and useful examples of possible indicators. Without doubt a similar list of possible indicators could be developed for the track programme. The inclusion of indicators in project documents would valuably sharpen the objectives and help to inhibit the over-expansion of programme content.

#### Training objectives and their evolution

75. Training objectives are to be understood as the internal objectives to be achieved by the end of the programmes themselves; in project language they represent the definition of outputs, which in these and all other purely training projects are the trainees themselves. The most severely behavioural objectives describe what trainees will be able to do at the end of the programme. This form of words enforces some kind of demonstrable result, which can often be accompanied by performance standards. The formula can be worked reasonably easily when *skills* are in question, but rather contorted turns of phrase may be needed for *knowledge* (e.g. "demonstrate that they have learnt.."). If there are *attitudinal* objectives, or simply an intention to open eyes and widen experience, the possibility of expressing verifiable end-of-programme objectives virtually disappears. Although such objectives or intentions have their own validity, any serious training programme - if it is to be called a training programme at all - needs "will-be-able-to" objectives to give it a target for all concerned to work towards, to control the relevance of content, and provide a measure of achievement. The various training objectives expressed in aide-mémoire and project documents covering the eleven programmes under consideration, even if they do not appear with that title, are now examined in this light.

76. For the first two rolling-stock programmes the aide-mémoire stated that the objective was to "upgrade the participants' theoretical and practical knowledge of rolling stock maintenance and repair" and the project document output was that the participants "will be trained in maintenance techniques and management of railway rolling stock equipment". It may be noted in passing that these two objectives are not consistent with each other.

77. In 1986 the aide-mémoire's objectives are expanded:

"The objectives of the first part [in U.K.] will be for the course participants to have

.understood the objectives of railway rolling stock, effective maintenance and repair

.understood the organization of an effective maintenance and repair system.

"The second part [in Kenya]... objectives are

.to learn the fundamentals of the techniques of the planning and control of such a system of maintenance and repair

.to learn how to pass on these techniques to others."

These objectives reappear in the project document under "Activities". The output is unchanged from the previous years except for the addition of "as well as in training methodologies in order to pass on their knowledge to others."

78. There is no change in the 1987 aide-mémoire except that the order of words in the first objective is corrected. The project document output contains a possibly significant change: "maintenance techniques and management" becomes "maintenance and techniques of management". However the change may only serve to indicate that the word "techniques" is superfluous in both cases.

79. In 1988 the aide-mémoire's objectives are still unchanged, which is remarkable in view of the addition of "management" in the programme title and the increased emphasis in management in the programme content. Meanwhile the project document now refers to "management of maintenance techniques for railway rolling stock". It is hard to discern a meaning in this phrase; it emphasizes the small importance given to the content of project documents for GTPs.

80. Major changes are introduced in 1989 for the rolling-stock rehabilitation programmes. In the aide-mémoire the objective is:

"... to upgrade the professional skills and knowledge ... in a systems approach to be applied for the management of railway rolling-stock rehabilitation, including repairs and manufacture of spare parts. [The participants] will also be exposed to methods and techniques on how to impart the acquired knowledge to others.

#### Training objectives

During Part I ... the participants will study the following:"

(Here follows a list of subjects which constitute content, not objectives.)

"The objectives of the second part ... will be to give the participants the opportunity to examine an actual rehabilitation situation which will take into account the following elements as appropriate:"

(Here again content follows. "To learn how to pass on skills and knowledge learned to others" appears at the end of the list.)

81. In the project document for 1989 the output does not express training objectives; it simply says that the participants "will be trained in the Management of Rehabilitation Techniques... as well as to enable them to pass on their knowledge to others." The "training objectives" given in the aide-mémoire (really content) appear under "Activities". (As noted in the previous section of this report the "Immediate Objectives" are to "upgrade the skills and knowledge...").

82. The 1990 aide-mémoire and project document both contain the training objectives set out below. As already noted these also become project objectives in this case. In the aide-mémoire the previous year's objectives reappear more appropriately as "Training activities".<sup>3</sup>

At the end of the programme, the trainees will be able to:

- .understand the concept of rehabilitation and the advantages which will result for the railways of a rehabilitation programme
- .identify the various items of a rehabilitation programme and to propose such programmes relevant to their own railways
- .undertake, implement and effectively manage a rehabilitation programme
- .decide whether or not a rehabilitation programme is workable or not for existing rolling stock
- .impart their knowledge and skill to others.

These objectives are very nearly as they should be. It should be pointed out that "understand" is not a good word to come after "will be able to". The participants were after all "able to understand" before the programme. "Explain" might be better, or in the context of this programme "make a presentation on". There are also some ambiguities (e.g. the difference between "undertake" and "implement", and the meanings of "workable") which would repay attention in any later version, but the main point is that proper training objectives have, for the seventh rolling-stock programme, all but been established. What is particularly important is that these objectives enforce, or ought to enforce, further consideration of the target participants and their responsibilities.

83. The training objectives for the track programmes have also undergone substantial evolution and have finally emerged in a virtually correct form. For the first two programmes (1988 and 1989) the objective in the aide-mémoire was "to upgrade the participants' theoretical and practical knowledge...", and the project document outputs stated that "trainees ... will have by the end of the course improved their knowledge and skills in modern techniques of railway civil engineering (covering maintenance of tracks). Participants will be able to develop learning and teaching skills so that they can disseminate their own learning more widely." (It is not clear why learning skills are mentioned here.)

84. In a very unusual development, the report of the evaluation at the end of the U.K. part of the programme<sup>4</sup> states that:

"Objectives of the [GTP were] discussed with the participants. They could read as follows:  
At the end of the course, participants will be able to:

1. design, plan, implement, monitor permanent way maintenance programme

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<sup>3</sup>The outputs in the 1990 project document are "to write a final report..., to write a report..., to present the report..., to prepare a training programme...". The evaluation team supposes that these have been written by the HTO without adequate advice from UNIDO on the intended nature of project outputs. Much the same goes for the "Activities" section. Yet the document successfully passed the control procedures.

<sup>4</sup>conducted by M. Ph. de Moustier, IHRD Branch, UNIDO.

2. more effectively utilize manpower engaged in permanent way
3. carry out projects such as rehabilitation projects
4. investigate causes of derailment and deal with emergency situations
5. impart the knowledge gained during the courses to colleagues and subordinates."

These objectives are correctly formulated and once again draw attention to the definition of the target participants and their responsibilities. (Do these training objectives reflect the present or future duties of the participants?) A little more precision with words such as "carry out" and "deal with" would be desirable if these responsibilities were clearly identified. It was also pointed out to the present evaluation team by former participants in Kenya that the second objective is inherent in the first.

85. The training objectives were not however incorporated into the following year's aide-mémoire or project document. Once again they recur in the report of the evaluation at the end of the U.K. part of the programme, with modifications:

"The programme objectives and outputs were to have the participants better able to:

- .design, plan, implement, monitor permanent way maintenance programme
- .more effectively utilize manpower engaged in permanent way
- .carry out projects of rehabilitation
- .investigate causes of derailment and deal with emergency situations
- .impart knowledge to others (training methodology)."

86. These training objectives finally make a public appearance in the documents for the 1992 programme. The aide-mémoire spoils the effect by shying away from "will be able to" and going no further than "will be better equipped to". Even in the objectives quoted in the previous paragraph we have "will be better able to". The use of "better" allows the possibility that any improvement, however small, constitutes achievement of the objective; no particular level of competence or knowledge is aimed for. In fact the old phrase "to upgrade the skills and knowledge" is similarly imprecise. Perhaps by a fortunate accident the 1992 project document incorporates the training objectives from the 1989 evaluation report, and thus starts unequivocally with "will be able to".

#### Programme structure and content

87. The first two rolling-stock programmes took place entirely in the U.K. and lasted eleven weeks. The last four weeks of the third and fourth programmes took place in Kenya; for the fourth programmes the U.K. phase was extended to eight weeks. This 8 + 4 pattern was maintained for the following programme but the second phase was held in Egypt<sup>5</sup>.

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<sup>5</sup>The U.K. phase has always been held in May and has thus included two public holidays, which fall on Mondays. In one year the programme actually started with a public holiday. The evaluation team understands the dates of these programmes are restricted by the availability of funds but is not entirely convinced that the incidence of public holidays has always been given due weight. Two days out of the forty working days in eight weeks represent a five percent reduction in working time. Programmes have also been scheduled during very hot weather in

88. The African phases of the maintenance and repair rolling-stock programmes were used to some extent for continued classroom inputs and for exercises in presentation and similar matters which on the face of it need not have been transferred to Africa. There was said to be great value in conducting some classrooms sessions in African facilities and in an African atmosphere, and the visits to local workshops will certainly have been well exploited. On the other hand the evaluation team feels that these African phases came fully into their own when they were mostly taken up with group projects, as they were with the two rehabilitation programmes in Egypt and Malawi, and with the track programmes.

89. All these five programmes were in *maintenance and repair*. The word "management" was added to the title of the fifth in the series but the programme outline show that little or no change in content went with the change in title. Even the first programme contains much management-level material. Input titles include:

- Organisation of maintenance schedules
- Workshop control
- Workshop overhaul costs
- Quality assurance systems
- Purchasing of spares and stores organisation
- Accounting methods
- Application of computers.

It is worth noting that the syllabus of this first programme already included "Training Methods" but this subject seems to have been dealt with in a single morning. Indeed all the theoretical inputs were covered in the first four weeks and in so brief a period the treatment must have been rather cursory.

90. The 1987 programme included three sessions in "Personnel Matters" (Selection, Industrial Relations and Staff Development) and four days on "Management Skills". these skills are not specified in the timetable but may have consisted at least partly of subjects set out in the 1988 timetable: "Qualities of Leadership", "Time Management", "Communication Skills", "Developing, Counselling and Appraising of Subordinates", and "Problem Solving and Decision Making".

91. By the 1987 programme the "training methods" part of the programme had been expanded to four continuous days under the title "Methods of Instruction/Visual Aids with Exercises and Feedback". Four days were similarly devoted to what was now called "Presentation Techniques" in the 1988 ("management") programme. In 1987 three further days were taken up with "Identifying Training Needs", "Setting Instructional Objectives" and "Skills and Task Analysis"; but in 1988 these aspects of training were covered in one day.

92. It should be noted at this point that having evaluated the first (1984) rolling-stock programme the then head of UNIDO's Training Branch identified a need for programmes of three kinds, separating out policy-makers and trainers from the maintenance and repair engineers. Even more detailed differentiation is contained in the UAR's letter to UNIDO of 3 October 1988, which sets out five topics, two of which on training, to be covered over the five-year period from 1990 to 1994. (The list does not incidentally mention railway track.)

93. In fact quite a number of UNIDO's group training programmes contain a training-of-trainers element, on the assumption that some knowledge of training management and methodology will help dissemination of main subjects, in other words achieve the multiplier effect. As far as is known no enquiry has been made in this or other programmes as to whether the duties of participants include, or ever will include, formal training. In this respect it appears

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Egypt and cold weather in the U.K. Here again the constraint is said to have been availability of funds, but it is certainly not desirable if the productivity of the programmes is affected.

to be an excellent solution to convert "training methodology" into "presentation techniques", a much more restricted set of skills useful not only for training but also for the non-training activities in which participants are much more likely to be involved.

94. The 1989 rolling-stock programme was the first on "Management of Rehabilitation" and the technical content was consequently quite different from the previous years'. This content does seem to reflect uncertainty as to programme objectives. There are potentially three foci: economic or financial feasibility, technical feasibility, and implementation of rehabilitation. The possible financial advantages of rehabilitation in the sense of life-extension are explained in the first weeks of the programme but participants are not trained in the assessment techniques. It was pointed out to the evaluation team that major rehabilitation programmes are assessed by donors and lenders or their consultants; but also that railways are faced with the question whether to rehabilitate (extend life) or not on a continuous basis and should have in-house capacity to come to properly argued decisions.

95. In both the 1989 and 1990 rehabilitation programmes the group project work which formed the main activity of the African phase and the culmination of the whole programme comprised a technical study of certain rolling stock with the aim of deciding whether rehabilitation was feasible. The studies certainly took account of various external factors such as the availability of original spare parts and of local manufacturing facilities; they were also expected to indicate implementation and subsequent running costs, at least broadly. They did not, and could not, go as far as recommending whether these costs represented a better or worse solution than other courses of action.

96. Previous inputs in the U.K. phase of the programmes dealt to a great extent with implementation aspects: contract requirements, resource planning, materials handling and storage, for example, which could equally well form part of production management programmes. A number of highly specific technical matters were also covered: welding techniques, selection and use of plastics, effective use of adhesives. Extension of participants' knowledge on these areas would undoubtedly improve the quality and thoroughness of *technical assessments*.

97. The rehabilitation programmes continued the practice of giving considerable time to "presentation techniques" and "management skills". While these subjects certainly have their own value they appear to the evaluation team to be further distant from the central subject of *rehabilitation of rolling stock* than they are from the central subjects of the earlier maintenance and repair programmes, and it seems doubtful that a course designed *ex novo* would have included them, or at least given them so prominent a position.

98. Participants in the rolling-stock programmes were required to undertake individual project work. The objectives were of two kinds. Firstly the participants learned how to collect information, assemble it into a report, and then to present the report to a meeting of fellow participants, directing staff, and visitors (such as senior railway officials). Secondly, if all went well, they obtained technical solutions to particular problems which were causing difficulty in their work at home. Each participant required his own individual programme of visits, usually to factories and workshops, and the organisation of these programmes thus constituted a very large volume of work for the programme staff.

99. This individual project work has been always been included with some unease, if not actual controversy. While the first objectives - report writing and presentation - are valuable techniques, these are not the central subject of the programme; nor is the technical solution to a particular problem. (The participants are attending a management programme.) The first objective in itself leads to increased attention during the programme to presentation techniques. The whole exercise may well absorb the interest and time of the participants to the detriment of their attention to the main subject matter.

100. Arguments in favour of these technical individual projects are all the same quite strong, and based in the real world. This real world is in fact full of the problems which participants are very anxious to solve, but in their own countries they lack sources of information and advice; in the U.K. they take a once-only opportunity by going directly, for example, to the manufacturer of brake blocks or air-conditioning compressors, or by examining procedures and documentation in maintenance workshops. Secondly, although the participants are engineers often with important organisational or managerial responsibilities, in their home countries they are not backed up by the range of well-qualified technicians which would normally be available in an industrialised country. The engineers, managers though they may be, simply have to have and make use of technical expertise in many fields and sometimes relatively basic fields. It is for these reasons that the individual project has continued to form part even of the rehabilitation programmes, which have even been extended to accommodate them. There is in fact such pressure for these individual enquiries that it would be unwise to ignore it, whatever the main objectives may be.

101. The rolling-stock programmes thus contain a good deal of material which could come under the heading of "personal development". The PER/GT forms make it clear that these elements are thought by the HTO to be of the highest importance: the answer to the question whether the training objectives have been achieved is given only in terms of team-leadership and such like qualities. It is not possible to quarrel with the value of these qualities, nor indeed, in the absence of a clearer specification, with their inclusion in the programme as subjects of study. In fact these subjects round out the programme design and make it excellently complete and balanced.

102. It still must be asked whether this kind of programme, giving so much attention to the personal development of the participants, was in fact intended in the first place. How much of this programme could have been run in Africa, either at railway or at general training institutions? Does the programme represent correct use of development assistance? In the absence of the original needs assessment it is neither possible to answer these questions nor to take issue with the programme content.

#### Structure and content: track programmes

103. The organisers of the first track programme in 1988 adopted the 8 + 4 structure which had been used for the rolling-stock programme the previous year; all four track programmes have maintained this structure, the eight-week U.K. phase being held at the British Rail Civil Engineering College, Watford, and the four-week African phase twice in Kenya and once each in Egypt and Malawi. It should be recalled that up to that time both HTOs had very close relationships with British Rail, and thus with each other, and some of the rolling-stock programme staff were involved in developing the track programme.

104. While there were unquestionable benefits in making use of experience with the rolling-stock programmes in this way, and the 8 + 4 structure has in the event worked as well for the track programmes, the fact remains that the structure was not derived from analysis of training requirements.

105. Despite the similarity in structure the style and content of the track programmes is markedly different from the rolling-stock programmes: there is a great deal more attention to technical matters, and less to personal development or training subjects. To judge from session titles in the timetables, many technical components comprise fairly down-to-earth and basic engineering material (for example "Track construction and geometry", "Curve, cant and speed", "Continuous Welded Rail - The Practice of Stressing") and management aspects appear comparatively neglected. The sessions on "Manual Maintenance of Jointed Track" and "Requirements for Mechanised Maintenance" may however have had a management angle. In this connection it is worth noting that the 1990 timetable is headed "Management of Maintenance and Repair of Railway Track"



whereas the subsequent timetable, for 1992 is headed simply "Maintenance and Repair of Railway Track".

106. This is not to say that management was entirely neglected, nor was there any marked difference in the 1992 content despite the absence of "management" in the title. Session titles include: "Maintenance planning", "Cost Benefit Analysis", "The Role of the Permanent Way Maintenance Engineer" and "Recruitment and Selection of Staff". A session on "Estimates, Finance and Budgets" in the 1990 programme was not repeated in 1992.

107. Similarly aspects of training were also dealt with, although there seem to have been only three input sessions. The best part of two days were devoted to individual lesson preparation, presentation and review. The following week another day and a half was taken up with preparation of individual course reports and presentation of these reports to the UNIDO representative conducting the mid-term review.

108. As in the rolling-stock programmes, an important feature of these track programmes was the long attachments to Permanent Way engineers in various parts of the United Kingdom. The African phase was almost entirely used for group projects - planning the repair and upgrading of a stretch of some 50-60 kms of railway line. (The background information on these programmes indicates that there are "three sections" in Africa, of which the first was the group project, the second concerned training skills, and the third "practical man management skills, communication skills, techniques for self-development and interpersonal skills." The timetables seem to cover the training skills in the U.K., and there are apparently no inputs on the Section 3 matters. The various skills will of course have necessarily have been developed during the fairly stressful project work.)

109. Although the programmes are loosely called "track", one part of each of them dealt with bridges and structures. This area of work was done in a period of four continuous days. The evaluation team is not convinced that this was an entirely satisfactory feature of the programme design. Some participants had no responsibilities for bridges and structures, and those that did found the coverage inadequate. It does not seem to have been thought out clearly what the participants would have learnt during their civil engineering courses at university, nor whether the inputs should be technical or managerial. This is not to say that there is not an important subject here for study by African or any other railway engineer. There are for instance sophisticated techniques of stress and fatigue measurement; and the implications of train speed and weight increases for the integrity of bridges need very careful calculation.

#### Evaluation design

110. The project documents for the first three rolling-stock programmes provide for mid-term and end-of-programme evaluations in accordance with normal UNIDO procedures. From 1987 additional funds are budgeted for an ODA evaluator to join the end-of-programme evaluation in Kenya, Egypt and Malawi. It is mentioned in the "Note for Participants" that the President of the Union of African Railways "will undertake a mid-term review in the U.K.". The project documents for 1989 and 1990 mention that the "group training self-evaluation report" (PER/GT) will be completed.

111. An unusual feature of the evaluation plans is the provision in the 1989 budget for a follow-up mission by the programme director and a UAR representative. This was to cost £25,000 (\$44,575), over 11% of the total budget for the programme. As far as the evaluation team is aware this follow-up mission did not take place. The 1990 project document also mentions that "the programme organizer will subsequently visit the participants in their own countries to follow up the progress of their activities in the field of rehabilitation." On this occasion the budget makes no financial provision for such a mission.

112.No special re-design of the evaluation sequence seems to have been thought desirable to take account of the two-country structure of the rolling-stock programmes from 1986 onwards. In the case of the track programmes, on the other hand, three evaluation missions were budgeted for 1988 and 1989, but these were cut back to two missions in 1990 and 1992. The three-mission series was to comprise a mid-term evaluation during the U.K. phase, and end-of-programme evaluations (complete with questionnaires, as far as is understood) at the end of both the U.K. and the Africa phases. It is not made clear which of the two U.K. missions is dropped when the series is reduced to two.

113.The evaluation for these programmes was in fact largely designed in accordance with the normal UNIDO practice which has been well proven over a great many GTPs. Whether it is time for this practice and its cost-effectiveness to be reviewed in general is beyond the scope of this evaluation. Similarly the uneasy relationship between the narrative end-of-programme evaluation report and the PER/GT remains to be clarified.

114.Evaluation as carried out, and the use made of evaluation report, are considered further in Chapter 4, 'Implementation'.

#### Documentation: "Aide-mémoire" and "Note for Participants"

115.In a document prepared for the evaluation team one of the HTOs took the view that 'the provision of [GTPs] would be improved if some of [UNIDO's] service were provided:

- .Earlier
- .With greater accuracy and reliability
- .With a greater degree of co-ordination
- .In a more business-like fashion
- .With greater effectiveness"

It is mainly implementation in question here - timely distribution of documents and tickets to participants, budgetary clearance, and so on - but at the design stage the aide-mémoire and the "Note for Participants" cannot altogether escape this forthright criticism.

116. As mentioned earlier in this report (and indeed in other reports on GTPs) the aide-mémoire is really a programme prospectus. Its present title, appearance and content are highly inappropriate for the functions of a programme prospectus, and it is high time for a radical review of this document. Apart from their generally unsatisfactory nature, which is common to all of these documents, the aide-mémoire for these series of programmes suffer from undue haste in their preparation, and could well have done with better proof-reading and closer attention to the correct use of English. This comment may be thought unduly fussy, but it must surely diminish the public reputation of a major international organization if it issues ill-prepared documents for wide circulation. This matter will become more important in an increasingly competitive world.

## CHAPTER 4

### IMPLEMENTATION

#### Selection of participants

117. For both series of programmes, the participants were selected on the basis of nominations made by their respective railways. Each railway was requested by UNIDO to nominate five participants with relevant background and skills. These nominations were then forwarded to UNIDO, upon which anywhere from one to three participants per each railway were selected, depending on the relevance of their background and skills, as well as on other factors such as the number of good nominations from other railways. With only a few exceptions, the calibre of participants was very good. There wasn't much variance in their background and experience, which facilitated homogeneity. However, this resulted in a situation whereby the participants had widely varying levels of responsibility, as a result of the vast differences in the sizes of their railways. For instance, while the participants from Egyptian railways were found to be low level engineers, the participants from Malawi railways, with equivalent background and experience, were towards top level management.

118. For participants from Arabic-speaking countries, certificates attesting to their knowledge of English were requested. However, even when such certificates were provided, it always turned out that the participants' command of English was poor. This is an old recurrent problem.

#### The training programmes

119. Without doubt both series of programmes were organised and conducted in an extremely thorough and professional manner. With very few exceptions, classroom presentations were at the correct level, well prepared and skilfully conducted; such exceptions as there were came from visiting speakers probably inexperienced in such work, or when the interests or professional level in the group were too diverse. Subject matter was well articulated and paced. The learning techniques were varied, and increasing emphasis was placed on active participation by members of the group as each programme went along. The experience of each programme and the opinions of the participants were taken into account when the following programme came to be prepared. Although the elements which were known to work well and to meet a good response were obviously repeated from year to year, they have been re-worked, rather than automatically repeated, each year.

120. A major and important part of each programme comprised attachments to maintenance workshops or permanent engineering sites. Participants were usually in pairs, or slightly larger groups, so that a great deal of preparatory work was always necessary. This was undertaken with great care. There are bound to be occasions when participants for one reason or another, technical or personal, do not get on well during attachments but the evaluation team has no doubt that preparations were as thorough as possible. As one programme succeeded another the preparatory process became easier, and HTOs and the units of BR and BREL concerned became more familiar with requirements and necessary preparations, but such familiarity never reduced the need for meticulously detailed arrangements.

121. Group study visits to workshops and to manufacturers similarly benefited from a learning process from year to year. For the few first rolling-stock programmes it seems that host organisations fielded insufficiently senior or qualified engineers to deal with participants' interests, but quickly came to realise that they were dealing with visitors with high professional qualifications and relevant experience. All group study visits, of course, suffer from the fact that not all members of the group are equally interested in the visit, and often not all of them can see or hear what is being explained; but despite these limitations such visits generally bring contingent

benefits - general interest and satisfaction at seeing a manufacturing process, control procedure or workshop layout.

122. As explained in the 'Design and Documentation' chapter of this report individual projects played a prominent role in the rolling-stock programmes. Here again the programme staff took endless pains to set up the programme of visits which almost each participant needed separately. The participants were thus able to pursue their enquiries very thoroughly and generally did so with enthusiasm and good results, especially when the subject of a project was a specific technical problem brought from home. The project reports formed the inputs for the presentations which were made towards the end of the programmes, and thus provided high motivation for the sessions on 'presentation techniques'. However the evaluation team shares the doubts about this aspect of the programmes which have been expressed by the HTO itself and by others concerned: the projects were not generally related to the central theme of the programme and distracted participants' attention to this theme. This question can be properly resolved only in the context of a much tighter definition of the objectives of the programmes. Until such a definition is forthcoming there is no way out of the dilemma.

123. It needs to be recorded that the staff of the HTOs took an extraordinary amount of trouble to look after the members of their groups in respect of personal and administrative matters, starting with meeting them on arrival at one or other airport in the United Kingdom and assisting them through immigration controls<sup>6</sup>. Much time and attention is given to creating a friendly atmosphere.

#### Administration Logistics and Documents Distribution

124. Administration logistics and documents distribution can be divided into two, i.e. those that are UNIDO's responsibility, and those that are the responsibility of the HTOs.

125. UNIDO is responsible for initiating each programme by submitting the project document to the ODA through the UK mission to UNIDO and requesting approval of funds, in good time. In most cases however, the funds are secured only at the last moment, invariable due to delay in submission of the project document. This delay has often disrupted planning and logistics of the programme in the early stages.

126. Simultaneous with the request for funds, UNIDO also requests for nominations for participants through the Res. Rep/UCD, who then either send the request directly to the relevant Railway, or through some Government Ministry, usually the Ministry of Industry or the Ministry of Transport. This is a very slow process often requiring months. When the nominations have been received by UNIDO, the selection is done at UNIDO HQ with the participation of the Training Director of the concerned HTO. The selected participants are then informed through the same channels. Quite often, the participants get to know that they have been selected only a few days before they have to leave.

127. The flight tickets are issued by the HTOs, upon receiving confirmation from UNIDO that the funds have been secured. Since the funds are almost always secured at the last moment, the tickets are also equally delayed. This has often resulted in participants arriving up to a week later

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<sup>6</sup>British immigration officials have apparently been making increasingly detailed and lengthy enquiries of persons arriving from developing countries. It has not helped the situation that a number of forged, or fraudulently obtained, documents, such as acceptances at universities, have been presented. For the benefit of individual fellows going to U.K. and of participants in any future group training programmes UNIDO might make enquiries from the British Council, which handles the vast majority of arrivals for study purposes, and from the Home Office, as to the best method of assuring a quick welcome rather than a long interrogation.

in the worst cases. It is the feeling of the evaluation team that the support services provided by UNIDO could indeed be provided earlier, with greater accuracy and reliability, with a greater degree of co-ordination, as well as greater effectiveness.

128. The HTOs are responsible for documentation directly related to the content of the programme. Every effort is made by the Programme and Administration Directors to prepare clear, accurate, reliable documents, which are continually up-dated in the light of experience and feedback from participants, the UAR and all interested parties.

129. The day to day administration of the programmes is carried out with utmost precision by the HTO's. Arranging the participants attachments to other institutions seems to be the most difficult task for the HTO's.

130. There does not seem to be any consideration given to the weather when scheduling the programmes. The UK portions of the programmes commence when temperatures are still very low, and the african portions, particularly those held in Egypt are held during extreme temperatures.

131. The participants were satisfied with all accommodation arrangements.

132. Many participants strongly recommended that the excess baggage issue should be clarified once and for all. It appears that the participants are given an allowance for excess baggage only for one sector of their homeward bound flights from England. They therefore face excess baggage problems on their way home after their stay for the four-week part of the programmes in another African country.

133. The evaluation team found out that there was no health insurance for the participants while they are attending the programmes, and wonders whether coverage through Van Breda cannot be arranged.

#### Responsibilities of UNIDO and the HTO's The Absence of Contracts

134. UNIDO's responsibilities seem to have been reduced to the following:-

- Requesting approval for funds from ODA.
- Sending out invitation letters and aide-memoire.
- Taking part in the selection of participants.
- Undertaking mid-term and end evaluations.

135. UNIDO was not involved in the preparation of the programme content, the day to day running of the programmes, nor is UNIDO involved in the administration and logistics of the African part of the programmes, which is left entirely to the HTOs.

136. The foregoing is quite surprising since, as the evaluation team learnt, there is no formal contract between UNIDO and the HTOs.

137. As the HTOs are in fact in the position of sub-contractors, a contract between UNIDO and the HTOs would serve to clarify exactly what each party is responsible for.

138. The HTOs have assumed the responsibility of issuing the flight tickets.

139. Therefore, UNIDO has handed over an awful lot of responsibilities to the HTOs, who are quite happy to take them on. The evaluation team wonders whether UNIDO should so much absolve itself of responsibility to the point of being marginalised.

### Monitoring and evaluation

140. The rolling-stock programmes all seem to have undergone mid-term-reviews and end-of-programme evaluations in the normal way<sup>7</sup>. The mid-term reviews took place about half way through the U.K. part of two-country programmes, although sometimes later than desirable if the results were to have an impact on the remaining portion of the U.K. part. A representative of the ODA generally took part in this mid-term review, and on one occasion the President of the UAR also took part. Not all reports are available, but the evaluation team is satisfied that enough have been examined for present purposes.

141. In regard to the track programmes, as noted in Chapter 3, the budgets provided for three monitoring and evaluation missions for each of the 1988 and 1989 programmes, and two for each of the 1990 and 1992 programmes. In the absence of complete sets of reports it is not clear whether the first two programmes were in fact reviewed and evaluated three times by UNIDO staff. Reports are however available on evaluations carried out at the end of the U.K. parts of the 1989, 1990 and 1992 programmes, and on those carried out at the end of the programmes in Kenya in 1988 and Egypt in 1990. It is mentioned in one of these reports that no end-of-programme evaluation was undertaken in Kenya in 1989.

3. Various points concerning the evaluation system, rather than the content of the reports themselves, are now considered.

142. Mid-term or end-of-UK? As noted in Chapter 3 of this report it was in the course of the U.K. evaluation of the 1989 track programme that training objectives first emerged, in discussion between the participants and the UNIDO official concerned, M. de Moustier. In the same discussion M. de Moustier obtained estimates from the participants of the numbers of colleagues they thought would benefit from a similar programme. This "Training Needs Assessment", as he calls it, was repeated the following year on the equivalent occasion. While it is remarkable and productive to make use of these missions to establish training needs and the possible numbers of future participants it is clear that the need to do so only existed at this stage because preparations in advance of the programmes were incomplete.

143. The use of the evaluation missions for these valuable purposes does not justify them. It should still be reconsidered whether the first part of a two-country programme should be evaluated as if it were a discrete programme, especially at the cost of eliminating the mid-term review. In the case of the programmes under consideration the second parts are after still conducted by the same staff of the same HTO, and there appears to be a good case for having a single end-of-programme evaluation covering the whole. On the other hand, the mid-term review of GTPs by all accounts incorporates an excellent opportunity for a neutral visitor to improve and intensify communication and mutual understanding between participants and programme staff, as well as to deal with immediate administrative matters, outside the purview of the HTO, on the spot.

144. While a mid-term review certainly has the purpose of identifying issues for immediate resolution or application during the same programme, it seems to be an open question whether the review has, or should have, the purpose of identifying and recording points which can only be

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<sup>7</sup>The mid-term review of six of the seven rolling-stock programmes was undertaken on behalf of UNIDO Engineering Industries Branch by Mr G. Kopolo, who has now moved to the Evaluation Staff and is a member of the present evaluation team. Mr Kopolo being an informant in respect of these reviews, the whole of this section on 'Monitoring and evaluation' is the responsibility of the other member of the evaluation team (Mr Manton).

taken into account for future programmes in the same series, or for GTPs on other subjects. If it does have such a purpose, the procedure for ensuring that recommendations are taken into consideration (and accepted or rejected) probably needs a greater degree of formalisation within UNIDO; but this applies to the GTP evaluation system as a whole.

**145. Follow-up of evaluations.** The various reports on a programme, mid-term review, end-of-programme evaluation, and PER/GT, are no doubt written conscientiously and may be read by a number of other officials. But who are the reports addressed to? Who is responsible for seeing that points raised are given the consideration due to them? To take an example, the end-of-programme evaluation<sup>8</sup> of the 1987 rolling-stock programme states:

"The participants were ... split on the degree of specialization. To explore this split further, a training content questionnaire was designed and administered... It became clear that half of the participants wanted more work in the shop, learning actual maintenance and repair techniques, while the other half felt they had already acquired those skills during training and apprenticeship, and wanted in the current venue to study management skills. The course is actually addressed to the second group. It will be beneficial to explore this further during the 1988 selection meeting in Vienna."

The 1988 programme was in fact modified to give more emphasis to management, and this word was included in the title, but it is not at all clear that the extremely important question of the split in expectations and requirements was adequately tackled, or indeed that it has been tackled since then. This matter is taken up in Chapter 6, 'Conclusions'.

**146.** Another example emerges from a series of PER/GTs and concerns one of the HTOs. In a comment on the instruction, the HTO states:

"A number of speakers ... did not relate sufficiently the material being taught to the African situation."

In the following year, exactly the same comment is made, and one can only wonder if the question was properly addressed. In the third PER/GT in this series the comment in the same place is:

"Because of the wide varying conditions in Africa it was not possible to relate the material to all African situations."

This seems to be an act of surrender. An alternative approach to the subjects in question should surely have been attempted by the HTO from the previous year; and the implications for the whole concept of the programme should have been closely examined by UNIDO - and should be examined in respect of any future programme.

**147.** Remarks on PER/GTs by the Evaluation Staff do not always achieve responses. For example in one year they write inter alia "The HTO, however, should provide a narrative assessment of training results achieved"; and in the next year "Same comments as last year apply. Please see copy attached." But in the same report the HTO's Senior Training Consultant refers to his membership of a UNIDO working group on the evaluation of GTPs as well as IHRD policies and strategies. "It would be nice", he writes, "to see some of the changes recommended in these documents being incorporated into both this document and the UNIDO programme."

**148.** On another PER/GT the Evaluation Staff comment is that "The PER/GT raises several points which require a well considered reaction from UNIDO." That is the end of the matter for the Evaluation Staff.

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<sup>8</sup>by Gael Williams, UNIDO Industrial Training Branch

**149. End-of-programme evaluation and PER/GT.** One of the PER/GTs examined by the evaluation team refers, in answer to certain questions, to the end-of-programme evaluation report, which is attached. This practice illuminates the apparent overlap between the two reports and the need for the two to be better coordinated.

**150. The conduct of reviews and evaluations and the structure and content of reports.** The PER/GT is of course highly structured, and a standard questionnaire is completed by participants in the course of end-of-programme evaluations. Apart from these documents UNIDO has not, as far as the evaluation team is aware, established standard practices or report structures for reviews and evaluations of GTPs. There is, admittedly, some similarity in structure between one report and the next in the series dealing with these programmes, but this seems to be the result of common practice, and perhaps a natural tendency to follow last year's format. Common practice might in fact coincide with best practice, but it might well help to secure useful and comprehensive reports if this practice were set out and promulgated as a standard guide. Improvement or consolidation of the quality of reports should of course go together with similar attention to the follow-up procedure.

151. A more schematic form of evaluation is all the more necessary because a series of programmes is often evaluated by different UNIDO officials from year to year. M. de Moustier's regular attention to the railway track programmes, and Mr Kopolo's to the rolling-stock programmes, are highly desirable, especially in the absence of a backstopping officer specialised in railway engineering, but such regularity cannot always be attained.

**152. Evaluation as a "management exercise".** The Programme Director of the rolling-stock programmes reports a novel approach to and use of mid-term reviews and evaluations for the purposes of the programme.

"It is ... essential that the programme and Administrative Directors effectively prepare the participants for both formal evaluation sessions. This is undertaken by developing participant motivation, creating open discussion, building personal confidence, and creating an understanding of the purpose and importance of both evaluation events.

"Both events are used as Management Exercises where participants can utilise many of the skills learned on the programme e.g.:

- .Presentation Skills
- .Evaluation Techniques
- .Managing your Boss and Team Members Effectively
- .Meeting Skills
- .Team Working
- .Fact Finding
- .Problem Identification/Assessment
- .Personal Learning Needs Identification
- .Quality Appraisal
- .Objective Measurement
- .Communication
- .Inter-personal Skills Application.<sup>9</sup>

It might be questioned whether the review or evaluation sessions still have a good chance of open and unselfconscious implementation if they are converted into well-prepared "management exercises".

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<sup>9</sup>The components of "management" in the context of these programmes has been discussed above. Has there ever been an express intention to develop these skills ?



153. One reason given for "preparing" the participants is that they are "generically frightened" of such formal procedures. The Programme Director adds that "the evaluating officers require to have a well disciplined, well organised approach in order to 'break down psychological barriers' and to ensure that participants are encouraged to do most of the talking!" Evaluating officers will not dispute the need for a well disciplined, well organised approach, all the more necessary if they are not themselves to become "generically frightened" by the exercise of twelve management skills.

## CHAPTER 5

### RESULTS

#### Participants' acquisition of skills and knowledge.

154. In general, the participants acquisition of skills and knowledge was very good. Most participants were able to learn some new skill or acquire new knowledge, which was immediately useful at a personal level.

155. Although all participants recognize the usefulness of exposure to advanced technology and strongly recommend it, there was some criticism by Kenyan participants of the technical relevance of the track programme. The participants stated that there was very little use if any, of the mechanized maintenance methods used in the UK, where they have high speed trains running on continuous welded rails, both of which conditions are non-existent on African railways. Furthermore, the track gauge in the UK is different from that of most African railways, thereby requiring somewhat different maintenance techniques. The participants suggested undertaking the programmes in a more appropriate place where there is a wide variety of railways including those that are similar to African railway systems. However, when going through the training objectives the participants very firmly said the first and main objective (i.e. design, plan, implement, monitor permanent way maintenance programme) was achieved.

156. There has been a variety of specific knowledge and skills acquired through individual projects in the rolling stock programme. These projects seem to respond to urgent problems that the participants have either discussed with their supervisors and brought with them, or personally proposed upon arrival in the UK, based on their day to day maintenance requirements and problems. However, the evaluation team wonders as to whether this was the purpose of the programmes, especially the programmes related to rehabilitation, which is a very specific subject.

157. Further benefits, apart from exposure to new technology, include exposure to higher working standards including punctuality and clean workshops. Some participants have tried to adopt these practices. This was confirmed by their supervisors. Participants also found discussions with railway men from other countries in Africa very encouraging. Very often, a participant suggested a good solution to a problem that had confounded another participant for a long time.

158. Presentation techniques that are part of the content of both programmes were found to be very popular. For most participants, it was the first opportunity they had to learn to make a presentation. All participants stated that this exercise had made them more confident in making presentations and in communicating with other professionals in general.

Another benefit which deserves mention is the opportunity to visit the manufacturers of the components that the participants use on a daily basis. During such visits, the participants have often discussed problems encountered with specific components and come up with solutions that facilitate better use of the components.

159. The trouble with the foregoing is that the benefits, although quite useful, are very dispersed.

#### Impact: Application of skills and knowledge acquired:

160. Despite many positive individual cases, the impact on the railways themselves has been rather weak. They may have been positive results in improved working standards and attitudes, which are however not identifiable or measurable.

161. The reasons contributing to this situation are as follows:

a) Size of the railways and organizational position of the participants: For instance, as has been stated before, whereas a participant from Egyptian National Railways (which is a huge organization with a rather cumbersome structure) may be immersed somewhere in the middle of the organizational structure, a participant of the same calibre from Malawi Railways, which is a very small organization, may be towards top management. Therefore, the Egyptian participant would have a much greater task in trying to convince management to introduce his ideas than would the Malawian participant.

b) The lack of resources: Most of the railways are so cash starved that they cannot introduce the simplest ideas put forward by the participants. The evaluation team came across several cases where an enthusiastic former participant managed to convince his supervisor to introduce a certain technology which he had learnt while on the programme. However, because of the initial investment required, however small, the plan was shelved for lack of funds.

c) Lack of supervisors interest. In many cases, the participants are highly motivated and would like to introduce some improvements, but cannot get the interest of the supervisor. In certain cases, the evaluation team found it regrettable that some participants were subordinate to supervisors who were not even aware of the potential of their subordinates.

d) The lack of activities going on in the participants railways. The evaluation team wonders if it is in fact foreseen that the participants will ever have to do the kind of rehabilitation assessment they did as group projects in Egypt and Malawi.

162. There however has been some coincidental application of skills and knowledge acquired. For instance, a participant on the track programme from TAZARA happened to return at the time TAZARA decided to utilize mechanized maintenance machines that had been procured earlier but were never put into operation. The engineers sent to TAZARA by the supplier of the machines were delighted to arrive at about the same time as the participant, who was immediately put in charge of the local technicians as well as the labour force. The participant managed to complete the preparation of the track (using his newly acquired knowledge) for the introduction of mechanized maintenance to the satisfaction of his supervisors as well as the supplier of the equipment. Another example is that of a participant from Tanzania Railways Corporation who returned right in the middle of a major rehabilitation programme involving 1000 wagons. He was immediately put in charge of the programme until its completion. Plans are afoot in TRC to rehabilitate 11 shunting locomotives under an ODA funded project. There are other instances of such examples, in countries which were not visited by the evaluation team (e.g. the World Bank funded rehabilitation programme for Ghana Railways, and the ODA funded programme for Sudan Railways).

163. Further isolated examples of the impact of the programmes include the following:-

- Introduction of systematic maintenance procedures for air conditioning units in the central zone workshops of ENR. This resulted in a drastic reduction of the failure rate.
- Introduction of rewinding of traction motors, which is underway at the Kenya Railways workshops in Nairobi.

- Introduction of QC in TAZARA workshops
- Acquisition of special purpose machines for wheel profiling in TAZARA
- Repair of the less sophisticated PCBs (previously sent for repair to South Africa or the UK) at the Malawi Railways workshops at Limbe
- Use of the skills and knowledge acquired from the track programme by two former participants from ENR to facilitate upgrading of a total of about 50 km of track in two separate divisions.
- Setting up of accident investigation committee in TAZARA

All of these were as a direct result of the effort of former participants.

#### Transmission of knowledge and skills acquired

164. The transmission of skills and knowledge acquired has so far been very limited. A former participant from Egyptian National Railways uses his notes from the track programme when training other engineers and technicians at Wadarn (the training school of Egyptian National Railways). This particular participant was already a trainer before attending the programme.

165. Similarly, a former participant from Kenya on the rolling stock programme, who also lectured many times at the Kenya Railways Training Centre before attending the programme, now uses the notes and knowledge acquired from the rolling stock programme, during his lectures.

166. There were only very few other cases of transmission of skills and knowledge. These are mainly cases where a former participant has assisted a colleague (who has not been on any of the programmes) to solve a problem, thereby imparting some of the newly acquired skills in a limited manner.

#### Condition for success

167. As has been discussed before, the most ideal situation would have been to base the design and content of the programmes, on the actual needs of the different African railways. Some railways may for instance be in great need of rehabilitating their rolling stock or upgrading their track while others may simply need to maintain the equipment they have. While a programme on rehabilitation may be ideal for the former groups, it will have little or no impact on the latter. Unfortunately, the evaluation team found no training needs analysis in any of the railways visited. However a training needs analysis for TAZARA is being undertaken with assistance from NORAD

168. Another comment is that since rehabilitation decisions are made by top management, it is perhaps this group that the rehabilitation programme should target. A separate programme on repair and maintenance could be organized for maintenance engineers and technicians.

169. Furthermore, the programmes would be rendered more useful and have greater impact if they were coordinated with the manpower development programmes of the different African railways. Regrettably, the evaluation team found out that there are no such programmes in any of the railways visited except again for TAZARA where a manpower development programme for the next ten years was under preparation, with financing from SIDA.

## CHAPTER 6

### CONCLUSIONS

#### **Impact**

170. Both series of programmes have been successful in that they have had an notable and beneficial impact on the participants. This impact takes three forms: (1) acquisition of identifiable and discrete skills in technical or professional areas, (2) acquisition of less easily measurable or describable personal attributes such as "leadership" or "self-confidence", and (3) broadened professional and personal experience, sometimes reinforcing theoretical knowledge, and sometimes raising professional ambitions and standards.

171. The immediate impact of the programmes on participants' railways has been slight: few of them have had the opportunity to apply the techniques or procedures which form the central subjects of the programmes, and quantified indicators of improved performance have not been forthcoming. On the other hand a good number of participants appear to have made use of specific technical information acquired in the course of work on the individual projects in rolling-stock programmes; the subjects of these projects are generally peripheral to the main management-training objectives of the last three of these programmes. Some railways may benefit from generally higher standards of work, especially when a number of former participants are working together, and a process of mutual understanding and reinforcement is set in motion; some expect to be able to make more specific use of knowledge and skills acquired if appropriate development or investment programmes come to be undertaken. This diffuse or potential benefit, although remote from the immediate objective of the programmes and impossible to measure, might, if it exists at all, be as important as the direct, intended results, even if it is much too shadowy to justify the programme on its own.

172. The principal reasons for the lack of application of knowledge and skills do not cause surprise. Some participants are not in an organizational position to institute change, some have no financial or material resources. In some cases it appears that more senior engineers have no interest in making use of their subordinates' new abilities, or that they are themselves under constraints. It should be pointed out here that railways appear to be subject to rigid hierarchical procedures. Such disciplined procedures, controls and approvals are *essential for safe operation*, but the attitudes percolate deep into railwaymen's souls and permeate all parts of their organizations. It is also the case that African railways are not generally subject to such commercial and financial imperatives or consumer pressure as provide incentives or motivation for efficient operation in market-economy terms - or not yet.

173. In some cases the railways simply do not have appropriate work going on: no mechanized track maintenance, for example, or no rolling-stock rehabilitation. This sort of situation is encouraged by the provision of free training opportunities which are naturally enough taken up even if they have no immediate bearing on organizational needs.

174. Without exception former participants appreciated the opportunity to discuss technical matters with their opposite numbers from other countries. Railwaymen rarely talk about anything else, even amongst colleagues, but additional pleasure and encouragement were unquestionably derived from the international nature of discussion during these programmes. In some cases it was specifically stated that solutions to particular technical problems were proposed in such discussions, which were both formal and informal. These exchanges might possibly be the most abiding memory which participants take home. Although once again this outcome of a programme cannot by itself provide justification for financing and running a programme the evaluation team regards it as very desirable and important. It presumably underlies the specific technical purpose of all UNIDO's international group training programmes. For all the difficulty of formulating

rigorous justification, linkages and objectives for GTPs the world would be a sadder and poorer place without them.

### Design weakness

175. Both series of programmes have been conducted by their respective HTOs with very great commitment and in a highly professional manner. However the programmes lack an adequate foundation or framework of clear project objectives. This deficiency is in turn the result of most regrettably inadequate definition of the organizational requirements for training. This omission has weakened the whole of the subsequent procedure of establishing training objectives, duration, content, learning methods, evaluation and feedback, and has jeopardized the chances of successful application. From the start of each series there has been no reference document against which to assess whether this or that subject or learning method is valid; it has been all too easy, over the years, for a programme to be modified, or its emphasis changed, to satisfy the individual or collective wishes of past or present participants, or to take into account professional preoccupations in the various organizations concerned (i.e. UNIDO, ODA, UAR and HTOs).

176. The normal design of technical cooperation projects should have prompted more thorough consideration of immediate project objectives (i.e. the objectives which the training programme is to serve, not the internal training objectives of the programme itself). It is however the common practice in UNIDO that project documents for GTPs are written and processed as a formality necessary for compliance with internal procedures, especially to create the financial account. The project documents for the railway programmes are no exception.

### Roles of the organizations concerned

177. The respective responsibilities of UNIDO, the Union of African Railways (UAR), the ODA and the two HTOs in specifying, designing and implementing the training programmes are not at all clear, and in the evaluation team's view the vagueness of relationships has diminished the effectiveness of the programmes. Furthermore the *locus standi* of UNIDO in relation to these programmes has been much weakened.

178. The ODA, despite its position as paymaster, did not consider it necessary to make any pre-investment in establishing training requirements before the start of the rolling-stock programmes. As far as the evaluation team understands a planning mission to Africa was proposed but turned down by the ODA; the reason might have been that if the francophone programmes had been running successfully for some years a similar programme could be assumed to suit the anglophone countries<sup>10</sup>. It was after all the UAR which was satisfied with the francophone programmes and was asking for cloned programmes in English. UNIDO had no reason to call the francophone programmes into question by insisting on an in-depth study of requirements in English-speaking countries. With hindsight such a study can be seen to be crucial, but the view was obviously different at the time.

179. The evaluation team has noted that the railway organizations visited vary greatly. The scale and nature of training required in Egyptian Railways, for example, with its 100,000 employees, 1,000 engineers and 8,000 km main-line network is far from the needs of Malawi Railways, which is a small organization, very short of resources and operating at a very modest level. The requirements of TAZARA, half way through a ten-year development plan supported by major donors and lenders, are different again. Even before the series of rolling-stocking programmes began it might have been thought so nearly impossible to identify common ground on which a unified international programme could be based as to be not worth the attempt. An alternative

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<sup>10</sup>The evaluation team has seen no written evidence on this point.

decision might have been that the attempt was well worth the time and expense involved even if it indicated that some other solution, that is other than the model UNIDO group training programme, could have been more effective.

180. The introduction of the track programmes was of course preceded by a four-week needs identification mission to four countries by one person from Transmark Ltd. While this was most valuable, it came quite a long way down the decision tree and was primarily intended to establish what an already planned course should cover. On the basis of a very general request from the UAR and of experience with the rolling-stock programmes the duration and two-country structure of the programme (with the UK as one of the countries) had already been decided, and the HTO identified. This kind of mission is a long way from the kind of thorough and extensive preparatory assistance project which was called for, not just in respect of this particular anglophone track programme, but of railway engineering training in some reasonably coherent region, perhaps more modest than Africa as a whole.

181. During implementation of the programmes the ODA, in the person of the Industrial Training Adviser, has assiduously attended mid-term review and end-of-programme evaluation sessions and taken part in the regular meetings in Vienna between programmes. A representative of the UAR has also taken part in some of these meetings although less often than desirable. They have made valuable contributions to the evolution of the two series of programmes but always within the pre-determined framework.

182. The role of UNIDO during implementation, never strong, in the absence of railway engineering expertise at headquarters, has become further attenuated as the HTOs have taken over various administrative matters normally in UNIDO's province. It appears that the offices of UNDP and UNIDO in Egypt, Kenya and Malawi have not contributed to the organization or administrative support of the phases of training programmes held in those countries and have not been asked to do so by UNIDO headquarters. On the professional side the HTOs were both anxious to assure the evaluation team that their regular contacts and past experience with African railways enabled them to ensure that the training programmes were relevant to these railways' needs. Here again they seem to be willing to take over what should really be the heart of UNIDO's responsibility, namely the proper specification of the programmes.

183. In this connection it is a matter of surprise and concern that no formal contract is concluded between UNIDO and the HTOs, who are after all in the position of sub-contractors. Although the HTOs have executed what they perceive to be their duties with great conscientiousness it hardly needs stating how undesirable it is that these duties have always remained undefined, especially as financial obligations are entailed. Although there never seems to have been any serious quarrel as to whether either side has properly executed its responsibilities there are various areas of misunderstanding on procedural and financial matters which cause irritation and inefficiency - as well as uncertainty and inconvenience for programme participants and their employers.

#### Documentation and vocabulary

184. The aide-mémoire announcing the programmes and the "Note for Participants" which covers a number of professional and administrative items are not very well presented and do not always contain accurate and consistent information. Lack of clarity with administrative arrangements, especially those with a financial component, has caused intermittent difficulties, verging on disputes. The title itself of "aide-mémoire" is unsuitable for a programme prospectus. A good deal of the information which goes into both these documents is drafted by the HTOs but it is of course UNIDO which is ultimately responsible.

185. At least in the case of the rolling-stock programmes the HTO reports misunderstanding by newly arrived participants as to the nature of the programmes they are starting. There is no corresponding complaint or comment in evaluation reports, nor was the point made to the evaluation team, perhaps because satisfaction was derived from the programmes even if original expectations were not met. Having read the aide-mémoire for all the programmes very carefully the evaluation team does take the view that there is room for more care in drafting the objectives and content of the programmes, and that some explanation of ambiguous but cardinal words such as "management" and "rehabilitation" would be valuable. Such care would in fact follow naturally from closer attention to defining target participants, and that in turn would be much easier in the framework of properly established project objectives. (Proof-reading and the use of English also merit care in documents widely distributed by an international organization.)

### Language

186. HTOs report that some Arabic-speaking participants have communication difficulty at least in the early weeks of the programmes. The (anglophone) evaluation team also found it quite difficult to communicate with some of the former participants from Egypt, who do not of course use English from day to day. The question of certification in advance of programmes is now very old indeed, but at least in Cairo it is now being tackled: all applicants for training in non-Arabic countries are required to take a test, in the case of English administered by the British Council or the equivalent United States organization.

Other subjects to be added not in this order: Women, Selection, Presentation skills, other content questions eg technical relevance, African phases (very good), possibility of transferring training totally to Africa (no)



## CHAPTER 7

### RECOMMENDATIONS

#### UNIDO and railway engineering

##### Recommendation 1

1. The organization of group training programmes in railway engineering subjects unsupported by relevant in-house expertise in the subjects themselves should be discontinued. The accumulated experience of the last eight years should not however be discarded. The next step should be a careful analysis of the components of the programmes already run in order to establish where UNIDO could make a greater technical or professional contribution to railway engineering than has previously been the case.
2. For example within the general area of rolling-stock rehabilitation feasibility studies are the essential first step. While the programmes run hitherto have mainly dealt with technical feasibility it is more than possible that UNIDO could greatly strengthen the capability of African (or other) railways engineers and managers to assess the economic feasibility of rehabilitation programmes.
3. Similarly the actual implementation of rolling-stock rehabilitation can be made more efficient by the application of general principles of production management and here again UNIDO might be in a good position to make a contribution from its expertise in this area. Workshop layout and organization, cost accounting and quality assurance might be components of programmes in this area.
4. Other areas might include (a) maintenance and parts management and (b) training management and methodology.
5. The maintenance and repair of railway track and of bridges and structures is not a subject so readily related to UNIDO areas of professional interest, being largely a matter of highly specialized civil engineering. However, the subject should be given further study within the context of the recommended analysis.

##### Recommendation 2

6. UNIDO should, in collaboration with the Union of African Railways as well as the Southern Africa Transport and Communication Commission and other sub-regional railway organizations (and if thought desirable the equivalent organizations in other continents), design a study of railway training and consultancy needs in UNIDO's areas of expertise. The study should not necessarily be confined to one language area.
7. Funding of the study should be sought from multilateral sources (e.g. UNDP/TSS1) or bilateral donors. The possibility of funding from industry sources should be examined.

##### Recommendation 3

8. If the two preceding recommendations are accepted it will be necessary for UNIDO to designate an official or unit to become fully informed about the world's railways, to establish contacts, and to act as the focal point within the organization.

#### UNIDO and group training programmes

**Recommendation 4**

9. UNIDO should re-examine and codify the rules and procedures for the administration of group training programmes. In particular contracts should be established between UNIDO and host training organizations as a normal practice. UNIDO should assure the efficiency of its own systems and should not delegate administrative functions to host training organizations.

10. The design and content of the "aide-mémoire" should be examined in detail and revised in accordance with their function as a programme prospectors. Other widely distributed documents such as "Notes for Participants" should similarly be brought up to high standards of accuracy and presentation.

11. Internal systems for obtaining authorizations, distribution of papers, and issue of air tickets should be re-examined and made more responsive to operational needs. In this context the distribution of documents to recipients countries and to potential and selected participants should be taken into consideration.

**Recommendation 5**

12. Project documents and their internal structure should be used to assure good training programme design, not simply as a formal procedure.

**ODA****Recommendation 6**

13. If the development of African railways has a high enough priority to attract funding the ODA may wish to sponsor a project to assess the HRD needs of railway organisations, including training needs, and to identify those which can best be met by means of international programmes. A sub-regional approach may be considered preferable.

**Union of African Railways****Recommendation 7**

14. The UAR should develop its own capacity to assess the HRD requirements, including training needs, of its member railways, seeking international assistance if necessary.

**Recommendation 8**

15. Subject to the agreement of its members the UAR should take the lead, or collaborate, in the HRD needs assessment projects proposed in Recommendations 2 and 6. The support and collaboration of sub-regional organisations such as the SATCC and the Southern African General Managers' Conference should be enlisted.

**Recommendation 9**

16. The UAR should identify training and development organisations in Africa which can effectively provide services to member railways, whether or not these organisations are specialised in railway training, and should circulate information. If the need arises the UAR should itself commission special programmes at some of these organisations.

17. The UAR should discuss with member railways the feasibility, advantages and costs of training programmes run in Arabic, and perhaps in further languages other than French and English, and should make proposals accordingly.

**Best Training Organisations****Recommendation 10**

18. It will be to the benefit of African railways if the professional competence and experience of ABB Transportation Ltd (formerly BREL) and Transmark Ltd continue to be made available and used. The two companies will rightly pursue their own operational and commercial priorities but should preferably take active measures to offer their training service to African railways whenever feasible. In this connection they may wish to develop and propose alternative options, for instance with shorter and more specialised modules for more exactly defined participants, or including study tours in more than one country.

## UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

### In-depth evaluation of Railway Group Training Programmes Organized by UNIDO in co-operation with the Government of the U.K.

#### TERMS OF REFERENCE

##### 1. Background

Each year UNIDO offers over 80 group training programmes in various technical subjects, each for an average of 15 participants from developing countries. The programmes are run in a number of European countries, as well as in some countries elsewhere, and are individually financed by a number of donor countries and through multilateral aid agencies.

Group training programmes aim at providing new skills to technical and managerial personnel from enterprises and government agencies. In-plant training programmes are run for periods ranging from 2 to 5 months and are carried out by industrial enterprises and/or industrial service institutions. The activities include lectures, exercises, plant visits, actual in-plant training, discussions etc. The responsibility of UNIDO is to promote GTPs which meet the priority needs of developing countries, find appropriate host institutions, organize (in conjunction with the host institutions) as well as finance the courses. The co-operation with the host institutions includes the identification of participants, the administration of the programmes and the evaluation of the results. The questionnaires completed by the participants at the end of the courses allow for conclusions with regard to the standard of the training received, which in general meet the expectations of the participants.

##### Co-operation with the UK:

The first two railway training programmes were conducted by BREL Ltd. (in Derby only) in 1984 and 1985. They were of a duration of 10 weeks each, and were on the subject of management of maintenance, repair and overhaul of rolling stock. End evaluation revealed that it was inappropriate to conduct the programmes in the UK only, and therefore subsequent IPGTPs had a total duration of 12 weeks comprising: Part I - U.K. for 8 weeks and Part II in an African country for 4 weeks. This arrangement was considered to be successful and continues to date.

##### Programmes provided to date:-

1984 (U.K. only)	-	Management of maintenance, Repair and Overhaul of rolling stock
1985 (U.K. only)	-	Ditto
1986 (U.K. and Kenya)	-	Ditto

- 1987 (U.K. and Kenya) - Ditto  
 1988 (U.K. and Egypt) - Ditto  
 1989 (U.K. and Egypt) - Management of the Rehabilitation of Railway Rolling stock  
 1990 (U.K. and Malawi) - Ditto

By 1988, rehabilitation had emerged as the single most important subject for most railway systems, as they had to make do with little or no resources for the purchase of completely new rolling stock. Thus, the course was redesigned in 1989 in order to meet the new demand and requirements. This change proved to be timely as several railways had embarked, or were about to embark on major rehabilitation programmes, which were financed by the World Bank, as well as by donor countries.

A total of 102 participants from English-speaking African countries have so far taken the course.

In 1988, following the successful implementation of four programmes in Derby, another annual IPGTP which deals with the maintenance of railway track was launched at Watford U.K. The programme is designed to enhance skills in railway civil engineering, providing for new methods of track maintenance and renewal. The programmes were conducted by Transmark/British Railways Board training unit.

**Programmes provided to date:-**

- 1988 (U.K. and Kenya) - IPGTP for Engineers responsible for the Maintenance and repair of Railway Track.  
 1989 (U.K. and Kenya) - Ditto  
 1990 (U.K. and Egypt) - Ditto  
 1992 (U.K. and Malawi) - Ditto

A total of 58 participants from English-speaking African countries have so far taken the course.

**2. Scope and purpose of the evaluation**

**Scope.** The principal issue to be addressed by the evaluation is the extent to which participants have been able to make productive use of the knowledge and skills acquired during their programmes and transmit their knowledge and skills to others. It will be important to identify the conditions in which the knowledge and skills are (or are not) effectively applied or transmitted. These conditions may include: the duties of the participant; his or her personal or organizational ability to influence decisions; the number of participants from the same railway system; the size of the railway system; the stage of economic and technological development of the participant's country; the nature of its economic management (centrally planned, mixed or market). This list is not exhaustive. Other conditions may be identified.

**Purpose.** The objective of the project is to enable UNIDO, the Government of the UK and the host training organizations to take decisions on improving the efficiency and effectiveness of the group training programmes in transferring relevant knowledge and skills to developing countries.

### 3. Issues to be covered

The design of the programmes should be examined with particular reference to their objectives. The project documents through which the programmes are financed should similarly be examined. Evolution of objectives and other aspects of the programmes, as well as project design should also be assessed.

The relationship between the project documents, aide-memoire and operational descriptions of training objectives as well as content should be examined, and the complementarity and precision of the various documents should be assessed.

The content and methodology of the programmes should be assessed in relation to training objectives. Particular attention should be given to: establishment of individual training needs, and the response to these needs; the proportion and nature of practical work as perceived by participants and by training staff; and progressive checks on participants' understanding and skills. Any repeated or persistent problems with language should be noted.

Any common problems concerning administrative or logistic support of participants should be identified. These may be related, *inter alia*, to notification of selection, travel arrangements, financial arrangements, food, accommodation, and leisure time.

Monitoring and evaluation procedures and their effectiveness as feedback to training design and implementation should be assessed.

Of particular importance to the Government of the U.K. are the following questions:-

- have the programmes had any impact at all?
- to what extent are the increased knowledge and skills being applied?
- can the developing countries concerned carry out similar training by themselves, considering the 8 year span of the programme?

Furthermore, the methods of selection of participants by the railway organizations as well as the complementary selection methods practiced by UNIDO and HTOs should be assessed.

A comprehensive list of general issues related to UNIDO's GTPs, which should be addressed as far as possible is attached as Appendix A.

Some specific tasks will be as follows:

- Desk research.
- Discuss the programme with UNIDO IHRD Branch.
- Draw up questionnaire for ex-participants to ascertain application.
- Draw up questionnaire for ex-participants' supervisors to ascertain opportunities for ex-participants to apply skills learned.
- Structure visits approach and format.
- Discussions with directors and staff of host training organizations.
- Hold interviews with ex-participants and their supervisors.

- Assess what participants have been able to apply, how they have done it and what has been achieved.
- Assess how participants have applied their trainer skills taught on the programmes (if not, why not?).
- Request evidence of training materials/ handouts given during the participants' training courses.
- Ascertain what other subjects would be appropriate for the future.

#### 4. Report

The evaluation report should be written in English and should adopt the following main headings:

1. Summary of conclusions and recommendations
2. Background to the evaluation
3. Design and documentation
4. Implementation
5. Results
6. Conclusions
7. Recommendations

- Annexes:
- I. Terms of Reference
  - II. Evaluation team
  - III. Work programme and itinerary
  - IV. Persons consulted
- (other annexes ad lib.)

The evaluation team's report will be submitted to the Director-General of UNIDO and to the Government of the U.K. The evaluation team may be required to make one oral presentation.

#### 5. Evaluation team and work programme

The evaluation will be carried out by a team comprising of a UNIDO consultant and a staff member of UNIDO Evaluation Staff. The work programme will be in four phases as outlined below:

##### Phase 1. in Vienna

- Desk research.
- Discuss the programme with UNIDO IHRD Branch.
- Draw up questionnaire for ex-participants to ascertain application.
- Draw up questionnaire for ex-participants' supervisors to ascertain opportunities for ex-participants to apply skills learned.
- Structure visits approach and format.

**Phase 2., Derby and Watford (U.K.)**

- Discussions with directors and staff of host training organizations.

**Phase 3., in the field**

The third phase will be a visit to the following four countries: Egypt, Kenya, Malawi, and Tanzania. During these visits, the following will be undertaken:-

- Hold interviews with ex-participants and their supervisors.
- Assess what participants have been able to apply, how they have done it and what has been achieved.
- Assess how participants have applied their trainer skills taught on the programmes (if not, why not?).
- Request evidence of training materials/ handouts given during the participants' training courses.
- Ascertain what other subjects would be appropriate for the future.

**Phase 4., in Vienna**

The fourth phase will be the completion and presentation of the report by the consultant.

The proposed calendar of work is as follows:

Phase 1. (desk study)	26 August 1992 to 1 September 1992
Phase 2. (HTO visits)	17 September 1992 to 25 September 1992
Phase 3. (field work)	26 September 1992 to 17 October 1992
Phase 4. (report prep. & debriefing)	27 October 1992 to 29 October 1992

**APPENDIX A****Problems and issues related to the structure and the contents of GTPs**

1. Whether UNIDO assesses the general structure of courses in line with defined priorities of demand. Courses tend to be repetitive to a high extent. But are they vital to the developing countries?
2. The contents of the courses (teaching programme, curricula, training elements, etc.) are mainly determined by the host institution. But such a supply-oriented assistance may not sufficiently take into account all the socio-economic conditions of each country, which for some types of courses may be essential. How can UNIDO play a more active role using its expertise and technical capabilities?



3. The interests of host countries are different. Some want to continue a long lasting co-operation or consider GTPs as a means to promote bilateral economic co-operation in the long run. Some donor countries which are potentially good hosts are not interested in financing GTPs. What is the optimal role of host countries and institutions in running GTPs?

4. Are GTPs the most efficient and effective means to provide service training? What are the alternatives?

5. What is the role of UNIDO in determining the structure and contents of GTPs, how can UNIDO strengthen it?

6. What is the course structure (according to subjects) which meets the demand best? How to set preferences?

7. How can long lasting co-operation with the U.K. Government and the host training institutions be maintained but adjusted to the priority objectives fixed by UNIDO in response to needs expressed by developing countries? How can new institutions be made interested to offer GTPs according to demand?

8. Should UNIDO develop a stronger role in the elaboration of programmes?

9. Should there be a continuation of efficient courses but step by step adapting to demand and preparation of new GTPs (in co-operation with host institutions as done in the past on the basis of mid-term evaluations)?

10. What is the demand for existing courses and criteria of preferences, optimal number and structure of GTPs?

#### Problems and issues related to training methods

1. To what extent is the selection of lectures, trainers, training methods, and teaching material mainly decided upon by the host institution? What role does UNIDO play, is it not strong enough? What is the quality of the training approaches followed?

2. Should UNIDO professionals also present lectures or conduct exercises during these GTPs?

3. Do the teaching materials meet established standards and are they handed over to the participants?

4. What is the substantial and methodological standard of the GTPs, how can it be improved?

5. Should a 'standardized' type of teaching materials/ aides/ techniques be introduced (which can be used by the participants for their training activities)?

#### Problems and issues related to the selection of participants

1. The candidate is nominated by national authorities, and based on the nomination form UNIDO selects the participants in co-operation with the host Government and training institutions. Does the form used give enough information which is of importance for an effective selection (firm in which the candidate works, output of the firm, product line, exporter or not,

technologies and equipment used, candidate's actual responsibility in the firm/institutions)? What is the selection procedure of candidates, how can it be improved? Who should be responsible for the final selection? On what criteria should the selection be based?

2. Are the participants in a position either to influence improvements at their place of work and/or to train others?

### Problems and issues related to evaluation of GTPs

The course mid-term and end-evaluations deliver various information reflecting the impression of the participants. Do existing procedures allow sufficient assessment of programme objective achievement and of programme output/training results achieved? Should the evaluation procedure be expanded? (Evaluation of printed teaching materials, etc.?) What is the relative importance and relevance of mid-term and end-evaluations?

**EVALUATION TEAM**

1. **Mr. Charles Manton**  
**UNIDO Consultant**  
**(Team Leader)**
2. **Mr. Goodspeed Kopolu**  
**UNIDO**  
**Evaluation Staff**

**Itinerary and Work Programme  
of the Evaluation Mission**

**1. Itinerary**

1992

26 August - 1 September	UNIDO, Vienna
17 - 25 September	United Kingdom
26 September - 1 October	Egypt
1 - 7 October	Kenya
7 - 13 October	Tanzania
13 - 17 October	Malawi
27 - 29 October	UNIDO, Vienna

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**Work programme**

2. The initial period at UNIDO headquarters was mainly devoted to study of the programme files made available by the IHRD Branch and copying of various papers for future reference; some evaluation reports were also obtained from Evaluation Staff records. Some meetings were held. The participant questionnaire attached as Annex 6 was worked out, together with a draft report outline (i.e. possible section-headings within the structure set out in the TOR).

3. In the United Kingdom the evaluation team visited:

ABB Transportation Ltd, Derby and Crewe<sup>11</sup>  
Transmark Ltd, London<sup>12</sup>  
British Rail Civil Engineering College, Watford  
Overseas Development Administration.

3. Both ABB Transportation and Transmark took the evaluation very seriously and devoted a great deal of time and trouble to the evaluation team's visits; detailed programmes were arranged comprising presentations on the companies, long discussions with all concerned in the

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<sup>11</sup>British Rail Engineering Ltd, or BREL, was privatized in 1988. At that time 40% of the shares were bought by the Swedish-Swiss group Asea-Brown-Boveri, or ABB. In 1992 ABB bought a further 40% from the other major shareholder. The name of the company was changed to ABB Transportation Ltd in September 1992. At the time of the original privatization 20% of the shares were sold or issued free to employees and directors, who have retained most of them. British Rail is an important customer of ABB Transportation Ltd but has no other formal link.

<sup>12</sup>Transmark Ltd is a wholly-owned subsidiary of the British Railways Board offering project and training services. It has no training facilities of its own but is able to make use of British Rail's.

programmes, and visits to training facilities and workshops. Comprehensive documentation was provided.

4. At the ODA the two officials hitherto concerned with sponsorship of the two series of programmes (Mr Scouler and Mr Skinner) and the Industrial Training Adviser (Mr Crofton), who took a close interest in the content and conduct of the programmes, have all retired recently. Although their replacements were of course well briefed they had no personal or in-depth knowledge of or opinions about the programmes. The evaluation team also had a short discussion on the ODA's own evaluation procedures.

4. In Egypt, Kenya, Tanzania and Malawi the respective national railway organizations, and the Tanzania Zambia Railway Authority (TAZARA), also took much interest in the evaluation and for the most part made very thorough arrangements for interviews with former participants, some of whom were called in from quite distant work places. The evaluation team was also able to meet senior officials as listed in Annex 4 in order to discuss the organizational context and relative importance of the UNIDO training programmes. Arrangements in Tanzania were complicated by the defective telephone system and the programme of meetings at Tanzania Railways Corporation was relatively disappointing. It is worth recording however that the Chief Civil Engineer of TAZARA took the trouble to come to the evaluation team's hotel in Dar es Salaam for an evening discussion.

5. The five railway organisations visited differed from each other in all sorts of ways, not least in size. They thus provided the evaluation team with diverse information and opinions, but it cannot be concluded that they are a fully representative sample of all the English-speaking members of the UAR.

6. The total number of former participants in the four countries visited is 67. The evaluation team met 46, or 69% of the target. This is thought to be a more than adequate proportion to give a good account of experience with the UNIDO programmes in the five railway organisations. The total number of participants who have attended all the programmes is 156, and the evaluation team thus met just under 30% of this total. Although quite a good proportion it would again be unwise to deduce that this 30% is a fully representative sample.

7. Participants were mostly interviewed in small groups, although some were seen singly if that suited them and their railways. The members of groups had attended the same series of programmes. Group meetings turned out to be gratifyingly interesting and productive; participants seemed to feel able to speak freely, even if their superiors (also former participants) were present, and a number of lively and articulate discussions took place. An additional advantage of group meetings in Egypt was that participants could help each other with their rather rusty English. Group meetings generally lasted about an hour and a half, but interviews with individuals were a good deal shorter. It should be emphasized that the questionnaire attached to this report was used only as a guide by the evaluation team.

8. Meetings with senior managers were generally much shorter and simpler. Three main questions were raised by the evaluation team: (1) the value to the railways of participation in the UNIDO programmes, (2) development or rehabilitation plans to which the UNIDO programmes were complementary, and (3) the desirability and nature of any future international programmes in railway engineering.

9. The evaluation team visited rolling-stock workshops in Egypt, Kenya and Malawi and was offered an excursion on a track inspection trolley in Malawi (which was turned down for lack of report-writing time). In Egypt the team was able to view the kind of Hungarian train-set which was the subject of group projects during the 1989 Management of Rehabilitation programme, and in Malawi the actual locomotive, 505, which fulfilled the equivalent function for the 1990 programme was also seen. (Repairs to the superstructure are complete.)

10. In all the evaluation mission went very smoothly and the team members are accordingly grateful to all those concerned. It is only a matter of regret that practically all the team's travel was by air or road. Only in the United Kingdom were trains used for some journeys.

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**Persons Consulted**

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**VIENNA**

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**Mr. William Holaday**  
**UNIDO, PRC**

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**Mr. Alois Rastl**  
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**UNITED KINGDOM**

**Mr. John Weaver**  
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**Mr. Mike Kinsey**  
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**Air Conditioning in Turbo Train  
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**Mr. Enrico Mayor**

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**KENYA**

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**TANZANIA**

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**Mr. Emmanuel Sailoni**  
**Technical Assistant, Permanent Way**

**Mr. Walter Mumba**  
**Technical Assistant, Permanent Way**  
**Malawi Railways**

**Other persons from Malawi Railways**

**Mr. Crispin Champiti**  
**Acting Chief Civil Engineer**

**Mr. J. Forster**  
**Human Resources Adviser**

**Mr. H. Thindwa**  
**Divisional Manager (Railway Services)**

**UNDP**

**Mr. F. Runchel**  
**UNIDO JPO**

**PROGRAMME EVALUATED**

The rolling steel programmes evaluated were as follows:

<b>Year</b>	<b>Title</b>	<b>Venue</b>	<b>Duration (weeks)</b>
1984	I.P.G.T.P. in Maintenance and Repair of Railway Equipment	UK	11
1985	- Ditto -	UK	11
1986	- Ditto -	UK/Kenya	11
1987	- Ditto -	UK/Kenya	12
1988	I.P.G.T.P. in the Management of the Maintenance and Repair of Rolling stock	UK/Egypt	12
1989	I.P.G.T.P. in the Management of the Rehabilitation of Railway Rolling Stock	UK/Egypt	12
1990	- Ditto -	UK/Malawi	14

The track programmes evaluated were as follows:

<b>Year</b>	<b>Title</b>	<b>Venue</b>	<b>Duration (weeks)</b>
1988	I.P.G.T.P. for Engineers responsible for the Maintenance and Repair of Railway Track	UK/Kenya	12
1989	- Ditto -	UK/Kenya	12
1990	- Ditto -	UK/Egypt	12
1992	- Ditto -	UK/Malawi	12

**QUESTIONS TO FORMER PARTICIPANTS**

1. What is your name?
2. Job title (present)
3. Which programme did you attend?
4. Have your position or your duties changed since the programme?
5. What did you think of the programme in general?
6. Did your participation have any influence on your personal and professional development?
7. Who suggested or decided that you should apply for it?
8. Have you been able to apply knowledge or skills acquired on the programme?
9. Can you give us an example of a specific change (new process, new procedure, new equipment) which has been introduced on the basis of information you acquired during the programme?
10. If the answer is no, why not? Irrelevance of programme content? Lack of financial or other resources? You are not in a position to initiate change?
11. Are you working within a rehabilitation or investment programme?
12. Have you or your colleagues attended any other training programmes (before or since the UNIDO programme), either as single events or as part of a coordinated series in your organization?
13. Was the total duration of the UNIDO programme right?
14. What do you think of the two-country system? In this connection which part of the programme did you find more useful?
15. Do you think the content of the programme was well organized and presented, in lectures, demonstrations, practical activities, study visits etc.?
16. How much of the content of the programme has proved useful to you?
17. Which has been more useful, the technical content or the general management content?
18. Did you take any particular technical problem for discussion during your programme? If so, did you come away with a solution?
19. Were you given any individual attention during the programme? In connection with questions mentioned in 12, or on other matters?
20. Were you given any training or reference material? Have you made use of it for training or reference?
21. Were the technology and working practices which you observed in the U.K. relevant to your work or applicable on your own railway?



22. Same question in regard to the African host countries?
23. Were any difficulties caused within your group by divergent technical interests?
24. Were there any problems with language?
25. Were administrative arrangements satisfactory (in both host countries as applicable)?
  - Time between acceptance and start of programme
  - Accommodation
  - Meals
  - Travel
  - Money
26. Were you satisfied with the information you received about the programme in advance?  
Did your experience correspond with this information?
27. Do any specially good points or bad points stick in your mind concerning your UNIDO programme?
28. When you had completed your programme did you report on it to your supervisors or colleagues? If so, how?
29. Do you think further programmes should be run of the same kind? If so, have you any recommendations for improvements?
30. Would you yourself like to attend another programme? In what field? (No promises!)