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Air Traffic Controller Training at Operational Units

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Abstract

The Recommendations and Guidelines for the Organisation and Conduct of Air Traffic Control Officer On-Site Training proposes the introduction of a structured approach to On-Site Training with a transition phase (after basic institutional training), a pre-On-the-Job Training (OJT) phase, using global and analytical simulations and the OJT phase where the emphasis is on 'coaching' of the student.

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EXECUTIVE SUMMARY

In June of 1990 the EUROCONTROL Institute of Air Navigation Services (IANS) Luxembourg was the venue of a forum to examine various aspects of On-the-Job Training (OJT) which had for some years been seen to represent a growing problem in the field of air traffic controller training.

Following this and at the thirty second meeting of the EUROCONTROL Working Group of Training Specialists (WGTS), it was formally requested that a group be established to examine and provide recommendations for:

- the organisation and conduct of OJT with a view to the ultimate harmonisation of practices;
- the selection and training of OJT Instructors (OJTIs) and;
- the way in which current modern training tools and methodologies could be used to effect a maximum possible reduction in air traffic controller training under live traffic conditions.

Hence in March 1991 a group of five persons knowledgeable in this field were brought together as Task Force Three and subsequently met regularly during 1991.

Finally, at the beginning of 1992 the Task Force's work was taken over by EATCHIP (European Air Traffic Control Harmonisation and Integration Programme), now EATMP (European Air Traffic Management Programme). Its membership increased to seven and work continued as WP 6220. This subsequently became Specialist Task 05.4000 (ST05.4000) within the Human Resources Domain (HUM).

Therefore, this report is the conclusion of this Group and conforms to the objectives of ST05.4000, in that it defines guidelines for the organisation and conduct of OJT for air traffic controllers, specifically in the areas of facilities, methods and instructional staff.

The original report (EATCHIP, 1995) was published in August 1995. Following consultations with the original authors and feedback received from those to whom the original had been distributed, this updated document has been produced. It reflects not only updated ideas but also a reiteration of certain prominent recommendations which remain to be acknowledged by all but a few Administrations. Other changes to the original document result from particular original recommendations being already adopted.

The Group expressed disquiet at a sudden increase in the recruitment of student controllers that, in some cases, seemed inconsistent with the available training capacity of individual operational units, specifically training at the operational position. It is therefore suggested that serious consideration should be given to individual national recruitment policies, capacity at national 'basic' training establishments and the ability of operational ATC Units to accommodate such a large number of students resulting from this recruitment policy.

OJT has long been recognised as critical in the training of an air traffic controller and of a major consequence in his overall formation. This period was also seen as being

incompatible with the needs of the user, and inconsistent with recommended coaching techniques.

In order to assist in overcoming this problem the Group has recommended the earliest introduction of three post-basic and site-specific training phases as detailed in [Chapter 5](#).

In each of these phases a common organisational approach is recommended which would not only take On-Site Training away from being an ad hoc affair and standardise it on a national basis, but also aid harmonisation on a European platform. In addition to [Chapter 5.3](#) the report indicates, in a tabular form, a suggested On-Site Training structure showing personnel and their respective tasks.

In order to comply with the aforementioned post-basic phases and with an aim to achieving the maximum possible reduction of training under live traffic conditions, extensive use of both Transition and Pre-OJT simulation, as defined in the Glossary of Terms, is foreseen. Full descriptions of the perceived benefits of this training are contained in [Chapter 6](#). This On-Site Training requires the earliest introduction of simulation facilities, preferably integrated, but at least with the extensive use of standalone facilities as described in this section.

It is recognised that there is an implied expenditure in the provision of these facilities. However, the Group believes that the implication of such expenditure will mean fewer constraints on the user, a higher level of training given prior to training under live conditions, and a standardisation of operational practices with an ultimately more efficient ATC system.

The Group strongly believes that the quality of training and of trainers and support staff determines the eventual success of any training system. **To this end, the report recommends a selection procedure for trainers, specifically the OJTI, a common European training package and the regular evaluation of training and coaching practices.**

The above-mentioned training package for OJTIs is detailed in [Chapter 8](#) and a Sub-Group to ST05.4000 has produced detailed objectives and a training programme as annexed.

It is recognised that many air traffic controllers express concern at the potential weakening of their operational expertise whilst carrying out tasks as an OJTI especially in the light of the increasing training demand. In order to help allay such fears and in order to maintain the high quality of Air Traffic Control Services (ATCS) in Europe, it is recommended that during any two-year period of coaching tasks, the OJTI must have the facility of consolidating his personal operational expertise for a minimum of 25 % of his working time.

A common code of practices is suggested which would be applicable in all three post-basic training phases including the need for specific objectives and performance indicators. This would ensure that national practices are consistent and standardised and would also imply harmonisation on a European level.

Since this summary has the purpose of merely highlighting the main implications of the report, the reader is drawn to the fact that detail is contained in the various subsequent sections. The Group wishes to encourage the reader to investigate further and commence the adoption of the report's recommendations with the least possible delay.

1. INTRODUCTION

1.1 Purpose

As requested by the WGTS at its 32nd meeting, Task Force 3 was implemented.

At the beginning of 1992, the work of this Task Force came under the auspices of EATCHIP and was designated as Work Package (WP) 6220. The terms of reference remained the same and they are as follows:

- the organisation and conduct of OJT with a view to the ultimate harmonisation of OJT practices;
- the selection, training and validation of OJTIs;
- the use of current and future training tools and methodology in order to effect the maximum possible reduction in training time under real traffic conditions.

The task was subsequently subsumed under the Human Resources Domain (HUM) as ST05.4000.

In August of 1989 EUROCONTROL circulated a questionnaire to fifteen National Administrations on the subject of current and projected manpower requirements. This survey was later extended to cover all European Civil Aviation Conference (ECAC) Member States shortly after receipt of the mandate from the Transport Ministers concerned.

The results of this Survey are included in EATCHIP (1997). Whilst it is unnecessary to reproduce these results in detail, the report does indicate a somewhat disturbing forecast of shortages during the nineties.

EUROCONTROL conducted another survey in 1997 which produced figures on the projected controller manpower situation for the period 1998/2002 (see EATCHIP, 1998). This survey confirms that even though a heavy recruitment programme is ongoing, there will still be shortfalls in the range of 3%. The OJT programmes for the States remain heavily committed as the recruitment process continues, and the traffic on offer continues to increase.

At this point the Group wishes to draw to the attention of the reader that their considerations brought them into areas not directly within their immediate Terms Of Reference (TOR) but which were nevertheless seen as being directly related.

The Task Force therefore feels that serious consideration should be given to:

- individual national recruitment policies;

- the overall capacity available at national 'basic' training establishments or schools;
- the ability of operational air traffic units to absorb or accommodate the very large number of students involved in reaching the manpower requirements;
- an evaluation of actual live training position capacity at operational units;
- the feasibility or principle of modifying operational staff rostering systems if this effects an increase in the capacity to train at the live position.

1.2 Scope

The Group recognises that the present generic basic training conducted at most national training centres brings the students to a limited level of knowledge and job-related skill which is currently augmented by a lengthy period of training under live traffic conditions, currently referred to as OJT.

This OJT phase has long been recognised as critical in the training of an air traffic controller and it is considered to be a major consequence in his eventual formation. At the present time this somewhat lengthy period of training under live conditions is not only proving incompatible with the needs of the airspace user but is also inconsistent or incompatible with recommended coaching and instructional techniques. It is evident from statements given in the EUROCONTROL Survey and discussions with a multitude of operational controllers from numerous Administrations and operational units that very wide differences in attitudes and practises are in existence.

The Group members therefore considered it necessary to recommend a series of coaching practices which, if adopted, would assist in the quest for harmonisation in Europe.

This principle of harmonisation is estimated to represent an important step towards improving Air Traffic Control (ATC) safety. Harmonised codes of practice for OJT should enhance the safety and efficiency of the ATC system in general.

In order to emphasise this opinion, the following extracts from the EUROCONTROL Common Medium-Term Plan (CMTP) (see [Chapter 9](#)) and the ECAC Strategy for the nineties are referred to as example:

- *'... due to the continuing nature of international developments ... training harmonised at a multinational level is required continually ..., it constitutes one of the keystones for the proper functioning of the system.'*
- *'Training programmes and resources must meet the needs for OJT and refresher training of sufficient Air Traffic Services (ATS) staff.'*
- *'Whilst consensus has not been achieved on harmonisation ... it is widely recognised that general international guidelines on selection,*

training and licensing of ATC staff would be of considerable assistance to National Administrations or Agencies.'

It is therefore in the areas of reducing the eventual training time under live conditions, providing appropriate training for those involved in coaching, suggesting appropriate means of carrying out the training and recommending a code of practices for OJT that the Group concentrated its efforts.

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2. FOREWORD

2.1 Responsible Body

The original Report was developed by the On-the-Job Training Task Force, created originally by the WGTS, and subsumed into the Training Sub-Group (TSG) of the Human Resources Team (HRT) of EATCHIP. The report has been revised under the authority of the TSG, which now is within the ambit of EATMP.

2.2 EATCHIP/EATMP Work Programme Document

The Report is identified as deliverable 07 of the EATCHIP/EATMP Work Programme Document (EWPD), Human Resources Domain, Executive Task 01 Specialist Task (ST)05.4000.

Deliverable 07 encompasses all aspects of ATS training. This Report will form the basis for a set of guidelines on the conduct of On-Site Training of Air Traffic Controllers.

2.3 Language used

The English Language has been used throughout the original text of this document.

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3. ORGANISATION OF TRAINING

3.1 Introduction

Agreeing with the sentiments expressed by members of the WGTS that '.... *training is not being given a sufficiently high profile within National Administrations ...*'; the Group strongly considers that training should be an autonomous function within all operational unit structures, working however in very close collaboration with other sections and divisions.

In the light of the present desperate need for ATS personnel, specifically air traffic controllers, and the consequent training of these new recruits, there should be no downgrading whatsoever of the priority allocated to training. It is the sentiment of this Group that training must be placed on the highest footing when decisions are made regarding funding of equipment and staffing.

It is recommended for each National Administration to publish a document for On-Site Training containing specific details of the responsibilities, qualifications and experience required for those personnel connected with operational unit training and how such training is to be organised and conducted at these units.

To date basic training brings students to a level of expertise, limited in some cases, that requires an extended period of further training under live traffic conditions. It is generally recognised that this is very difficult to undertake at larger, busy air traffic units and either affects the airspace user or the quality of the training given. In either eventuality the result is undesirable.

It is for this reason the Group recommends the earliest introduction of three phases of site-specific training described in the following paragraph, together with the associated tools and methodologies implied in Chapter 5 'Aims, Methodology and Means'.

Therefore, this section goes on to describe a recommended general structure of training and the introduction of three On-Site Training phases.

3.2 Training Phases

3.2.1 Basic/Institutional

Basic or Institutional training for the *Ab Initio* student has been defined and is contained in EATCHIP (1997). An institutionally-based set of training objectives for the rating stage is currently under development and will be issued late in 1999. When complete, these objectives will lead easily into the next phase, that of 'transition'.

3.2.2 Transition Phase

3.2.2.1 Description

This is an evolutionary period during which the student will develop site-specific knowledge and understanding through various learning mediums such as traditional classroom instruction, and Computer-Based Training (CBT).

Additionally, the student will further enhance his basic skills by undergoing site-specific analytical simulation to a level of achievement permitting him to proceed to the Pre-OJT Phase.

3.2.2.2 Personnel

This phase will demand a different approach to the instruction given. It will require the person who instructs to be trained and competent in classroom instruction, the use of CBT (when applicable) and the design and conduct of Analytical Simulation. It is for this reason that the Group strongly recommends that the training given in this phase is carried out by a Unit Training Instructor who would be a person having previous coaching expertise and having undergone through training relevant to these tasks.

3.2.2.3 Foreseen Benefits

The Group believes that with the introduction of this phase each student will receive a form of training that is completely adaptable to individual needs and he will proceed to the next phase only having reached the desired entry level.

Because each student will receive training to his particular needs, he will be able to return to Analytical Simulation in the event of encountering problems or specific situations in a later phase of training.

3.2.3 Pre-OJT Phase

3.2.3.1 Description

In this phase the main method of training employed will be Simulations where students will further practice routines and develop skill levels to a higher degree than has been seen in the past. By definition this form of simulation is highly interactive. A secondary method will be the use of Analytical Simulation for selected case studies.

3.2.3.2 Personnel

Initially the Unit Training Instructor will have the responsibility of training in this phase. However, as the student progresses within this Pre-OJT Phase the OJT instructor will become increasingly involved. This should help to ensure a smooth transition to the live training position in the OJT Phase

and increases the operational OJTI's involvement in the overall training programme.

Should Analytical Simulation techniques be employed during this phase, the responsibility will fall on the Unit Training Instructor.

3.2.3.3 *Foreseen Benefits*

As with the previous phase, the training will be highly individual and tailored to the student's learning rate.

Students will enter the live environment having a skill level compatible with the requirements of the operational position and will have experienced most, if not all, predicted situations.

Finally, there will be an increased transparency of the training system due to the involvement of operational OJTIs.

3.2.4 **OJT Phase**

3.2.4.1 *Description*

The traditional 'live training' position where previously acquired skills and routines are further developed and consolidated under the supervision of a qualified OJTI in a live traffic situation.

3.2.4.2 *Personnel*

This type of training will normally be conducted by the operational qualified OJTI. This will not preclude the Unit Training Instructor coaching periodically during this phase, in fact this practice is seen as desirable for reasons of giving summative assessment, maintaining operational instructional expertise and monitoring the uniform application of standards and the quality of OJT practices.

Note: These recommendations ensure a highly individualised form of training and should not be seen as precluding the possibility of 'stepping backwards' in the event of a student experiencing particular difficulties, or in order to provide the student with additional practice under heavy workload, including 'emergency' situations.

3.2.5 **On-Site Training**

The Group recommends that a common approach to the organisation of On-Site Training be implemented by National Administrations at each operational unit as follows:

- Target validation times and maximum training times for each operational position should be determined;
- Training objectives and performance indicators for each phase should be detailed in unit documentation;

- Each unit should have appointed and trained assessors to evaluate student performance at regular intervals, specifically during the OJT phase;
- Each unit should record student assessments using forms containing summative assessment criteria.

The overall responsibility of On-Site Training will be that of the Unit Head of Training or his Deputy if this position exists. This responsibility will not only include the organisation and overall management of all the aforementioned activities but also the monitoring of training standards and co-ordination on a regional or national level.

Until now in this chapter the emphasis has been on the training of relatively inexperienced personnel. This Group has not ignored the need from time to time to retrain previously experienced controllers at an operational unit. It is foreseen that these personnel would follow the same structure albeit that the time required in each phase would be significantly reduced.

Finally, the Group believes that the introduction of these phases of site-specific training will significantly reduce the occupancy time in live traffic and allow greater flexibility of training.

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5. AIMS, METHODOLOGY AND MEANS

5.1 Introduction

The Group has identified the post-basic phase of training as a critical period in the attempt to reduce the occupancy of the live position.

It is considered that within the Transition and Pre-OJT phases, as described in Chapter 3 'Organisation of Training', the extensive use of either stand-alone or integrated facilities to conduct Transition and Pre-OJT Simulations will bring the student to a much higher level of ability than has been experienced in the past.

This section will go on to describe in some details the use of these Transition and Pre-OJT Simulations for students entering a radar environment.

The suggestions given in this section imply expenditure on the part of many Administrations, yet such expenditure should be seen as an investment not only for today but for a higher quality of Human Resources in the future.

5.2 Transition Simulation

5.2.1 Interpretation

It is the extraction of selected case studies of situations from Pre-OJT simulation or from the live environment which are presented to the student in a gradual and controlled manner. In this way the student has the opportunity to examine and practise all possible ways of solving specific problems within a particular piece of the units airspace.

5.2.2 Rationale

This form of simulation will reduce the manifestation of new and untried situations when progressing to Pre-OJT Simulation. Transition Simulation is, after all, the extraction of all foreseen elements requiring in depth explanation and practice.

By taking this path the student will be able to practise and repeat actions necessary in becoming conversant with the multitude of possible resolutions to problems encountered in a particular piece of airspace. In addition, specific procedures relevant to that unit and of an increasing degree of complexity may be introduced thereby fully preparing the student for the next phase, Pre-OJT Simulation.

5.2.3 Training Period

Transition Simulation should be introduced as a bridge between the basic simulations conducted at Training Schools or Institutions and Pre-OJT as previously defined. That is to say that the primary use of this method would

occur in the Transition Phase as recommended in Chapter 3 'Organisation of Training'.

Additionally, should the simulation facility possess a method of performance recording, it is foreseen that a student could work unsupervised but only within a controlled environment and within prescribed parameters. These circumstances should be considered as self-analysis/appraisal and not self-tuition.

It is further considered desirable that this form of simulation could be beneficially used during the Pre-OJT phase whenever significant problems are encountered in Pre-OJT Simulation, thereby enabling a thorough investigation and appropriate remedial action. During OJT itself, that is to say training with live traffic, Transition Simulation could prove extremely useful in the following circumstances:

- When unforeseen circumstances arise under live conditions, which would, in the opinion of the OJTI, justify an in depth analysis or appraisal, the OJTI should be in a position to request a replay of the situation in the simulation facility in order to accurately examine it in detail;
- Likewise for normal debriefing of a student, this facility should be available for the OJTI should he consider it meritable.

5.2.4 Training Tools

This form of simulation does not require the sophistication of facility demanded by Pre-OJT Simulation and may readily be conducted using one of the 'stand-alone' PC or microcomputer-driven units which are now readily available.

This type of simulation (transition), therefore, does not require the use of high-fidelity and integrated units, and would normally be conducted away from the operational environment.

5.2.5 Training Personnel

It is recommended that Transition Simulation is carefully planned and implemented by a Unit Training Instructor.

The question of training courses for instructional staff has not been addressed by this Group since it may infringe upon the work being carried out in ST07.3000.

However, the Unit Training Instructor must, in addition to any recommendation in ST07.3000 of the EWPD have a high level of learning in:

- simulation techniques,
- CBT techniques (when applicable),

- the design and preparation of simulation exercises,
- formative and summative assessment procedures and written report writing.

Correct use of the equipment purchased as well as the use of built-in analytical features should they be included.

This higher level of involvement on the part of the Unit Training Instructor is reflected in the recommendations made by this Group in [Chapter 3](#).

5.2.6 Methodology

The method of designing Transition Simulations shall be based upon a number of exercises originating from selected traffic samples taken from the live environment and hence Pre-OJT Simulation. It is in this way that the student will become fully conversant with the most commonly encountered and predictable operational problems of a particular unit.

Additionally, site-specific procedures should be introduced, increasing in complexity but in controlled learning steps.

As has been previously mentioned, these exercises will require a more pedagogical approach than Pre-OJT Simulation and should therefore come under the authority of the Unit Training Instructor staff.

5.2.7 Limitations

The preparation time required for the design of such exercises especially in such a graduated fashion is seen as a hindrance, not as a limiting factor.

5.2.8 Advantages

The student will be fully conversant with unit procedures before entering the Pre-OJT phase and Pre-OJT Simulation.

Additionally, the student should develop a greater degree of flexibility at an early stage of training.

Finally, the Group suggests that an increased harmonisation of operational practices will result.

5.3 Pre-OJT simulations

5.3.1 Interpretation

It is the realistic representation of the operational environment and ensures that all or most of the following parameters are included:

- times (taken directly from traffic samples maintaining fidelity),
- traffic and commonly occurring call signs,
- aircraft types,

- performance parameters,
- weather parameters.

Structured from the Transition Phase and systematically increasing in complexity to a point where multiple situations are comprehensively integrated into exercises allowing the student to progress to a complex live situation.

Included within Pre-OJT Simulation should be the gradual introduction of other parameters such as co-ordination procedures, handover/takeover procedures, system failures and degraded conditions.

5.3.2 Rationale

These are simulations based on the highest level of realism and will prepare the student to enter the operational position. This is possible as a result of the systematic development of his skills during exercises, exercises which become increasingly complex until they accurately represent the day-to-day working situation.

The Group remains convinced that Pre-OJT Simulation (together with Transition) represents the crux to the problem of reducing training under live traffic conditions to the absolute minimum.

5.3.3 Training Period

This form of training should be given primarily during the Pre-OJT Phase but may, under certain circumstances, form a part of the OJT Phase.

During Pre-OJT Simulation there must be the inclusion of certain situations which will be presented to the student for the first time as 'unpredicted' or 'unknown' and will require an analytical approach to solving.

Should a student encounter a situation or situations under live conditions (OJT) and which the OJTI considers may best be analysed in simulation, they (OJTI and student) must have the facility of returning either to Transition or Pre-OJT simulation.

This 'step back' to simulation must be agreed with, and is the responsibility of, the Unit Training Instructor. The Group wishes to emphasise that such a 'step back' is not a regression in a training programme but simply a temporary return to simulation in order to highlight a specific encountered situation.

Note: There will, of course, be a secondary benefit to this situation in that there will be an enhancement of the communication and co-operation between the operational environment and the unit training environment and this will increase the 'transparency' of the training system.

5.3.4 Suggested Training Tools

The facilities used for the conduct of Pre-OJT Simulation should be site-specific (parameters as previously described being taken from the live environment).

It is desirable that the hardware should be high fidelity, i.e. a reproduction of the operational workstation, including communication facilities and integrated, i.e. that these facilities should form an integral part of the operational environment. This type of equipment is regarded as high fidelity.

5.3.5 Training Personnel

This form of training will be primarily carried out by a Unit Training Instructor who should be joined at an advanced stage by the operational OJTI. This will enable the OJTI to become conversant with the capabilities of the student and with a Training Programme in general.

5.3.6 Methodology

The creation of such systematically arranged exercises will, of course, be based upon selected 'live' traffic samples or, perhaps, taken from recorded samples extracted from the automated radar system, should it be present, and will be designed to achieve pre-defined objectives.

It is considered crucial that the authenticity of such exercises be verified by a Unit Training Instructor in very close co-operation with the operational OJTI.

Similarly, it is felt to be essential that these exercises for Pre-OJT Simulation are maintained and updated to represent a realistic situation. This should be seen as a joint process between the Training Instructor and the OJTI.

5.3.7 Limitations

The preparation time for Pre-OJT simulation exercises may be foreseen as being an exceptionally time consuming and complex affair. This fact reinforces the requirement for the Unit Training Instructor to have additional and relevant training to that of the OJTI.

In addition, whatever level of realism is inserted into these simulations, nothing can accurately produce the apprehension and emotion encountered the first time the new controller assumes responsibility at an operational position.

5.3.8 Advantages

In addition to the primary function of Pre-OJT Simulation, several by-products will emerge from its introduction.

Firstly, as a result of the increased and continual communication taking place between the Unit Training Instructors and operational OJTIs, there will be an inherent 'transparency' of the training system as a whole.

Additionally, it is extremely valuable that such training takes place within the operational environment for both psychological and sociological reasons. The human being will behave in a far more receptive manner when surrounded by his normal working or living environment and this training is recommended to take place in the particular operational surroundings.

In the event of new procedures being implemented, such facilities may and are recommended to be used for the pre-operational retraining of existing control staff.

It is felt, also, that not only may existing controllers and students be trained in the use of a degraded system, but also controller refresher training (considered to be important by the Group) may be undertaken using Pre-OJT Simulation facilities.

Some controller proficiency checks, e.g. regular checks in the handling of aircraft in emergency, could be adequately undertaken using the Pre-OJT simulation facility.

5.3.9 Foreseen Cost Benefits

In most Administrations post-basic training other than OJT is normally conducted at a central training location. The costs foreseen in the implementation of realisation of Pre-OJT Simulation at the Operational Unit may, in part, be offset against student and instructor travel and living allowances and, in some cases, the costs of the training itself.

If the Group's recommendations are implemented, the greater part of training will of course take place away from the operational position and it is predicted that there will be obvious benefits in terms of fewer restrictions or constraints to the airspace user.

The Group believes that implementation of these recommendations for the use of Pre-OJT Simulation will lead to a standardisation of practices at the operational unit and the improved quality of controller training and in achieving this, the ATC system will ultimately function at a higher level of efficiency.

The attention of the reader is at this point drawn to an issue of considerable importance.

The costs involved in the outright purchase of Aerodrome Simulation tools is reducing and many Administrations will be attracted to their use in order to reduce a rather prolonged period of training under live traffic conditions.

While the Group would encourage training organisations to consider using such facilities, it does add the following note of caution:

1. As with any other simulation facilities, where their use allows for the reduction of OJT time to less than that currently recommended by ICAO, the full certification of the facility, the instructional and support staff and detailed exercise objectives will be required.
2. Such certification implies, of course, considerable costs over and above the initial capital expenditure and the cost against the training benefit accrued needs to be given consideration.

This discussion may indeed become more pressing with the advent of licensing requirements and a pre-emptive examination of the impact of such requirements could very well prove worthwhile.

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6. PERSONNEL

6.1 Introduction

Within this chapter the Group primarily considers the selection, training and conditions of the OJTI. It is considered that the quality of training, trainer and support staff will determine, in most cases, the eventual success of the training system. It is recognised that other personnel may be involved in the overall training process of an air traffic controller at the operational unit. When this training is critical to the formation process, suitable training must be given to these additional training personnel and should be the subject of urgent consideration by the members of ST07.3000.

To a large extent in the past, coaching and/or instructing has been seen as an onerous task imposed upon relatively unprepared operational personnel. Fortunately many Administrations are finally becoming aware that OJT is an extremely important and difficult task requiring well-trained and dedicated staff. The Group has considered in brief the functions of the Unit Training Instructor but did not feel that to determine the content of such training courses for these personnel lay within its terms of reference but those of ST07.3000 in co-ordination with this Group.

6.2 OJTI Selection and Training

Pursuant to the recommendations of Task Force Two, this Group feels that a potential OJTI should have been validated for a minimum of two years on the operational position on which it is anticipated that he will instruct.

The Group strongly recommends that this two-year period represents an absolute minimum experience level which may need to be significantly extended in certain more complex operational environments.

In addition to having achieved this minimum level of operational experience prospective OJTIs should have demonstrated good performance in:

- interpersonal effectiveness,
- communication skills,
- motivation and general attitude to work and to training in particular,
- peer credibility.

This last point (peer credibility) is considered to be significant since training in the live environment requires the widespread co-operation of other personnel; it is therefore imperative that the prospective OJTI is considered to be operationally totally competent by the majority of his operational peers.

The next step in the selection and training procedure is for the potential OJTI to follow the standardised course package proposed in this report. Individual Administrations may propose further and additional courses for their OJTIs but the aforementioned package is seen to represent the minimum requirement.

On the successful completion of the above package, the OJTI will undertake a further module which will be tailored to meet the needs of the operational unit at which he will coach, i.e. site-specific.

Thereafter, it is recommended that the OJTI undertakes a probationary period of coaching during which time there will be a regular evaluation of coaching / instructional practices by the Unit Training Section.

The Group further recommends that each Administration should make provision for some form of incentive package for those personnel to whom an authorisation to instruct is issued. Such an incentive may perhaps include career progression, financial benefit, additional leave entitlement or some other mutually agreed means. Whilst it is recognised that such incentives should not be the primary inducement for staff to undertake the duties of an OJTI, it is felt that having selected, trained and authorised suitable candidates, some form of recognition should follow after a period of probation.

Hereafter follow general recommendations for the conditions of OJTIs:

- The Group firmly believes that OJTIs should not be assigned to such duties on a continuous and permanent basis. It is imperative that operational rating, competency, expertise and credibility is maintained by all personnel engaged in coaching or operational instruction.
- Therefore, the Group recommends that any two-year period of coaching must include the possibility for the OJTI to exercise the privileges of his ATC Rating for a minimum of 25 % of his working time. A full return to operational duties should follow for a period of time sufficient to allow the OJTI to regain his personal confidence and maintain his enthusiasm for both operational and coaching tasks. This will help the OJTI to regain and consolidate operational expertise and help to allay the fears that many controllers express about operational instructing.
- Furthermore, the Group feels that any controller within the training structure should have the right to return to normal operational duties subject to completion of a minimum time period as instructor or OJTI.

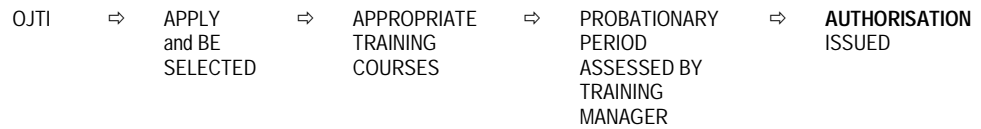
6.3 On-the-Job Training Instructor

CONTROLLER ⇒	BE ⇒	PROPOSED	TRAINING ⇒	SITE-SPECIFIC ⇒	PROBATIONARY ⇒	AUTHORISATION ISSUED
	BE	NOMINATED	COURSE	COURSE	PERIOD ASSESSED BY TRAINING UNIT	
<i>2 years min. + demo of performance</i>	<i>(Subject to mutual agreement)</i>		<i>(Subject to successful completion)</i>			

6.4 Unit Instructor

The role of the Unit Training Instructor is vital to the successful and complete implementation of the Group's recommendations. Until such time as this or any other Group ST07.3000 is tasked with recommending

selection and training procedures for these personnel, it is recommended that a process similar to that of the OJTI be undertaken, i.e.:



The implementation of such a structure throughout the ECAC membership should ensure that training at the operational unit is progressing towards the quest for harmonisation.

Note: It is acknowledged that at some Operational units the role of OJTI and training instructor may, out of necessity, need to be conducted by the same person or that these roles are interchangeable. Nothing in this report precludes such an eventuality providing that the appropriate training programmes are undertaken by these personnel.

6.5 Assessor Selection and Training

It is important that, in order to accurately provide an independent summative assessment, suitable personnel are trained in these techniques. The Group therefore recommends that such personnel will, as a minimum requirement, have passed through the processes of selection and training for the OJTI and have had suitable training in assessment techniques.

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7. TRAINING COURSES

Sequential to the recommendations of the Group regarding the qualification period of the controller nominated for a coaching role, each candidate should undertake the standardised course package recommended in this chapter.

To support this advice the Group would wish to draw the reader's attention to the opinion of Swisscontrol:

'Coaching that must be done, either in simulation or ... in live traffic must be done properly by selected, qualified and well trained persons ... and we have identified from the beginning the training of OJTIs as being one of the major issues in connection with our ... training scheme.'

In order to define the standardised course the Sub-Group approached seventeen organisations. From those who responded as having specific training courses for OJTIs, the course content was analysed by the Sub-Group in order to prepare the syllabus for the standard course package hereafter called the 'Training Programme for the OJTI'.

The 'Training Programme for the OJTI' was first publicly given at EUROCONTROL Institute of Air Navigation Services (IANS), Luxembourg, in December 1994. Soon after arrangements were negotiated for the package to be presented and given to certain Administrations. There followed several more requests from National Civil Administrations to have the course presented and given to them for inclusion in their respective training programmes. To date, those Administrations where the 'Training Programme for the OJTI' is included in the National Training curriculum are: Belgium, Denmark, Hungary, Ireland, Norway and The Netherlands.

The programme has additionally been given on location in Austria, France, Malta, Maastricht and the Czech Republic as well as Bulgaria and Poland as part of the 'Poland-Hungary: Aid for Restructuring the Economy' (PHARE) project, a programme sponsored by the European Union.

It should be noted that the United Kingdom and Federal Republic of Germany are routinely conducting a similar training course within their own National Training Programmes.

The agreed standard course syllabus and objectives for inclusion into National Training Programmes is annexed to this document.

The Group believes that this course will assist nominated participants in the development of the required attitudes, skills and knowledge base needed for their forthcoming role and more professional training.

Furthermore; it is strongly recommended that further funds and facilities are provided to the above-mentioned Group in order that, at some stage in the future, CBT or multimedia packages may be developed.

Finally, the Group wishes to re-express the sentiment that all nominated OJTIs should follow this course as a matter of priority and recommend that national Administrations provide this training programme as a refresher for OJTIs who have not had the benefit of the above-mentioned course in its current form.

8. COACHING PRACTICES

The reader is reminded at this point that the following statements and recommendations are equally applicable to all of the phases described in this report.

In Chapter 7 it is implied that the Unit Training Instructor should have successfully completed the EATCHIP/EATMP 'Training Programme for the OJTI'. Similar assumptions are made regarding the training instructor at national or international training establishments whether they are sponsored by a national civil, military or commercial organisation. It is clear from research, however, that this is far from the case in reality and that many civil and military instructors have not had the benefit of schooling in the structured practices advocated in the 'Training Programme for the OJTI' and detailed in the following paragraphs.

It is recognised that recommendations for training other than OJT lie outside the initial scope of this report. The Group does, however, strongly advise that instructors and OJTI's alike participate in the EATCHIP/EATMP 'Training Programme for the OJTI' and that similarly structured practices be adopted in simulation and OJT wherever such training is conducted.

The following customs are therefore recommended to be adopted as standard practices for all phases of practical training:

- Unit training managers must ensure that a comprehensive list of training aims or objectives be defined and declared for each training phase and for each sector or position at an operational unit. These should be published for the benefit of all involved in the training chain, instructors, OJTI's, students and assessors alike.
- Until such time as these objectives become universally available, instructors and OJTI's are advised to formulate an aim, aims or focal points for each and every training session, to discuss them with their students and to use them as the reference for their eventual post training discussions with the student. These and the following concepts are described in detail in the documentation for the 'Training Programme for the OJTI'.
- Each training session in whatsoever phase should begin with a briefing of the student which needs to be comprehensive in some cases. These briefings should embody discussion on the aims and levels to be attained, explanations of the coaching methods to be used, detailed explanations and discussions regarding the operational constraints on the working position (information necessary for the safe activities of the position), and guidance from the instructor or OJTI on overcoming relevant known previous shortcomings on the part of the student. The structures are outlined in the documentation for the 'Training Programme for the OJTI'.

- During the training activities notes should, whenever possible, be taken regarding the relevant observed abilities and development of the student, both approved and unwanted.
- Each training session must similarly conclude with a comprehensive debriefing detailing the observed strengths and weaknesses of the student and should be based upon the aims of the session and the notes recorded by the instructor or OJTI. The focus here should be on the professional development of the student and be factual in content. The recommended structure is contained in the appropriate section of the training documentation for OJTI. This debriefing, the formative assessment (see Glossary of Terms) will normally be given verbally but could usefully be enhanced by a written summary.
- Training managers should ensure that suitable facilities and time are made available for the purpose of briefings and debriefings. It is apparent that many Administrations consider OJTIs to be controllers alone, and not as professional trainers and are evading the necessity to accommodate or adopt such concessions.
- Summative assessments should be made at regular intervals and in writing. These summaries should be an independent appraisal of the student's progress and as such, should not be made by the person(s) responsible for the day-to-day training of a particular student. The independence of these assessments will help to marginalise extreme working practices and bring an element of standardisation to each unit.
- It is strongly advocated that the performance of OJTIs and their training practices should be the subject of routine assessment in order to maintain the highest standards.
- It is in the training and assessment of OJTIs that the Group feels training systems are potentially amongst their weakest.
- It is furthermore recommended that at all units where training is conducted, Unit Training Instructors and OJTIs should convene at regular intervals for the purpose of co-ordinating all aspects of local training.
- In addition to the above recommendation, the Group advises that Unit Training Instructors should meet with their counterparts from other units, as well as with management on a regional or national level in order to review training policies and practices. This process should be carried out, at the minimum, on an annual basis.

In conclusion, the Group has, through the recommendations in this and other parts of this document, made continued reference to the decentralisation of post-basic training.

It is clear that, in many larger Administrations, significant differences in the way training and other practices exist. It is imperative that, in consenting to the principles and recommendations contained in this document, Administrations ensure that practices are harmonised throughout the national training organisation and that local distinctions are in no way permitted to develop which would undermine or be significantly at variance with agreed national practices.

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9. CONCLUSION

On-the-Job Training has long been recognised as critical in the overall training of air traffic controllers. At the present time this lengthy period of training under live traffic conditions is not only proving detrimental to the management of airspace and incompatible with the needs of the user, it is also inconsistent with recommended coaching techniques. Additionally, there are very wide differences in both attitudes and practices within the European network of Administrations.

This Guideline represents the findings of the original Group, and its associated Sub-Group over an initial three-year period and a review undertaken in the first trimester of 1998. This revised version has been compiled in the light of experience gained since its publication in 1995. The Report can form a basis from which OJT practices can be improved or enhanced.

The Group therefore encourages Administrations to commence adoption of the recommendations that follow with the least possible delay.

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10. RECOMMENDATIONS

- R1 National Administrations continue to review present and future On-Site Training capacity and adjust recruitment policy accordingly.
- R2 National Administrations design and publish a document containing details of the organisation of On-Site Training.
- R3 Three post-basic and site-specific training phases be introduced in order to effect the maximum possible reduction in training in the live environment.
- R4 A common approach to all post-basic training phases be undertaken to include parameters, objectives, performance indicators and assessment procedures.
- R5 The urgent provision of funds to support the introduction of stand-alone or integrated analytical and global simulation facilities and, where applicable, the introduction of CBT packages.
- R6 Unit training instructors to be given suitable training modules in order to realise the full potential of this investment.
- R7 All potential or existing OJTIs and simulator instructors to be selected to undertake the course package designated as being an EATCHIP/EATMP standard training package appended to this report.
- R8 Each Administration make provision for an incentive package for personnel who have successfully completed a selection and training process and who are actively engaged in On-Site Training.
- R9 OJTIs, once selected and trained, should not be assigned to operational instruction duties on a continuous and permanent basis and during OJT assignments must be permitted to maintain the operational privileges of the ATC rating for a minimum of 25 % of operational time.
- R10 The list of OJT practices contained in this report to continue to be adopted as a standard for all Administrations.
- R11 Regular co-ordination meetings to take place between training instructors and OJTIs on a unit basis.
- R12 Unit training instructors and training managers to meet at least annually on a regional or national level to review and co-ordinate overall training policy and practices.

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11. OJTI TRAINING - SUBJECT OBJECTIVES

11.1 The Training Organisation

Course participants shall:

1. be able to describe the student selection procedure, training programme and trainer role within their organisation;
2. understand the differing roles of the OJTI and instructor;
3. be aware of the different channels of communication within their training organisation;
4. understand the purpose of the relevant training tools available within the training organisation;
5. understand the rationale behind the use of a particular tool;
6. understand the aim, methodology and trainer role with the use of each training facility;
7. recognise the need for counselling and be aware of counselling facilities within the training organisation.

11.2 Human Relations Training and Communication

Course participants shall:

1. understand group development and interactions that take place within a group;
2. be aware of the general principles of effective listening;
3. recognise the importance of effective verbal communication;
4. be aware of the influence of non-verbal behaviour in the communication process;
5. be aware that attitude has a direct effect on the learning process;
6. realise how different personality styles influence interaction;
7. recognise the impact of individual operational instructional styles on the learner;
8. understand the cognitive mechanisms of the air traffic controller;
9. understand the importance of building positive relationships;
10. be aware of the influence of positive or negative recognition;

11. be able to give effective feedback to a student and recognise feedback signals from a student;
12. understand the negative effects of rumour;
13. recognise the development of interpersonal conflict and be aware of the general principles of conflict resolution;
14. recognise the existence of direct or defensive coping;
15. understand how group interactions work within an ATC environment.

11.3 The learner

Course participants shall:

1. understand appropriate motivational theories applicable to a training/learning situation;
2. recognise the importance of adaptation to the needs of the learner;
3. understand the Self-fulfilling Prophecy or 'Pygmalion Effect'.

11.4 Coaching Techniques

Course participants shall:

1. be able to effectively brief students before taking a training position;
2. be able to monitor a student's progress and use effective intervention techniques;
3. be able to carry out post-session debriefing in a manner which is beneficial to a student;
4. give feedback in the form of accurate and objective formative assessment;
5. understand the role of summative assessment;
6. write clear and factual training reports.

11.5 Stress

Course participants shall:

1. recognise the symptoms and effects of stress in training;
2. be aware of appropriate actions to manage stress.

11.6 Recommendations

It is recommended that, for EATCHIP/EATMP purposes, the OJTI training programme should be of two-week duration. However, it is recognised that,

where facilities and circumstances permit, the given objectives may be achieved through a distance learning programme followed by a one-week training module.

In order to achieve standardisation it is recommended that common documentation for the two-week training programme and a common distance learning package for the alternative method of OJTI training be produced.

Furthermore, it is essential that the standard distance learning package be administered and monitored by the Unit Training Instructor and should come under the overall responsibility of the Head of Unit Training.

This distance-learning module will, of necessity, require an assessment in order to ensure that the entry requirements have been met for the one-week programme. As with the distance learning documentation, the entry assessment must be standard in all Administrations.

Returning to the EATCHIP/EATMP two-week programme, it is strongly endorsed for the following reasons:

- It ensures a more gradual participant development towards the OJTI training objectives;
- The above will allow adequate remedial training in either theory or practice to be given, should this be considered necessary;
- A longer consolidation period of each step is foreseen throughout the programme;
- From an organisational viewpoint, the distance learning programme is considered to be very difficult to administer especially on an international basis.

Note: The preceding pages represent the course programme for both of the above-mentioned modules. It should be noted that certain practical exercises are quoted and are in use in the OJTI course.

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12. GLOSSARY OF TERMS

For the purpose of this document, the following definitions shall apply:

1. Assessment

Consideration of all, or individual aspects of, a student's actions. This may in the form of a verbal or written opinion of that person's position and the likelihood of what will occur in the future, depending on whether that assessment is formative or summative.

2. Formative Assessment

Assessment given for the purpose of personal development which should have an important and lasting influence on that person's abilities or attitudes. It may be given in a verbal or written form but, in whatever way it is given, should be only for that person's attention, or use, and should be factual in content.

3. Summative Assessment

An assessment which represents a summary of the students attitudes and abilities over a period of time. This summation should be given in both a verbal and written form and must be factual in content. It should not be given by those responsible for coaching a particular student but should be an independent appraisal by suitably qualified personnel.

4. Operational Instruction/Coaching

The training of a student in a live situation, conducted by a qualified OJTI. This training will include demonstration, guidance, advice and encouragement to enable the student to reach required operational goals.

5. On-the-Job Training (OJT)

The integration in practice of previously acquired job-related routines and skills under the supervision of a qualified OJTI in a live traffic situation.

6. On-the-Job Training Instructor (OJTI)

The qualified controller (in many organisations previously known as the coach) who has successfully completed the EATCHIP/EATMP 'Training Programme for the OJTI'. He or she will primarily have the responsibility for providing training at an operational working position, but may be called upon to give training during the Pre-OJT phase.

7. Pre-OJT

The phase of locally-based training during which extensive use of Simulation, using site-specific facilities, will enhance the development of previously acquired routines and abilities to an exceptionally high level of achievement.

Note: To be most effective, this training should ideally be conducted in the operational environment.

8. Pre-OJT Simulation

A realistic representation in simulation of the operational environment, ensuring that all or most of the operational parameters are met.

Note: In defining Pre-OJT Simulation the Group considers it necessary to state that the facilities should ideally be site-specific (the simulations should be related to the procedures, airspace structure and traffic samples encountered at that particular operational unit).

9. Transition Phase

An evolutionary stage following basic training during which site-specific theoretical knowledge and understanding will be transferred to the student using a variety of methods and during which skills will be developed through the use of site-specific simulations.

10. Transition Simulation

Operational traffic samples, situations and problems presented to the student in a gradual, analytical and piecemeal manner in order to prepare him to upgrade to Pre-OJT simulation.

Note: This form of simulation is the separation of these exercise components into parts for study and interpretation and where the student is permitted to exercise a variety of possible solutions through replay and discussion. It is in this manner that the student is encouraged to expand his lateral thinking and perceptive abilities.

The Group wishes to emphasise that such simulations may adequately be conducted on stand-alone, user-friendly, computer-based facilities.

ANNEX A: TRAINING PROGRAMME FOR ON-THE-JOB TRAINING INSTRUCTOR COURSE DOCUMENTATION

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Julie Hay

This programme draws on the theories of 'Transactional Analysis', a widely recognised approach towards growth and development. The chapter entitled 'Personal Interactions' has been designed by Julie Hay, an internationally accredited expert in the application of transactional analysis within organisations.

Julie has over thirty years consultation experience in the public and private sector, including twelve years with British Airways at a time of major changes within the airline. She is now Chief Executive of AD International, an organisation specialising in training consultation. Julie is the author of several works including 'Transactional Analysis for Trainers', McGraw Hill, (1992), 'Working it Out at Work', Sherwood (1993), and 'Transforming Mentoring - Building Developmental Alliances', McGraw Hill (1995).

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Foreword

This training programme has, in the past, used the term 'coach' and 'coaching' to describe the trainer and method of training. Since this programme first came into being, certain developments have taken place within the Human Resources domain (HUM) of the European Air Traffic Management Programme (EATMP). *In order to align the training programme and this document with the work being conducted by the Licensing Group and Human Resources Team (HRT) of EATMP, the terminology has been changed to read 'On-the Job Training Instructor (OJTI)' as being the person who gives the training.*

We hold the view that the general method of training for use under live traffic conditions lies within the meaning of 'coaching' and have therefore retained the use of the word to describe the widespread technique the OJTI would use. Having said that there will be several occasions where the OJTI will, out of necessity, give instruction and these instances will be discussed as the programme develops.

Similarly the term 'trainee' has been substituted by the word 'student'.

In June of 1990 the EUROCONTROL Institute of Air Navigation Services (IANS) was the venue for a forum to examine various aspects of On-the-Job Training (OJT) which had, for several years, been seen to represent a growing problem and a major consequence in the field of controller training. Following this forum, it was formally requested that a group of persons knowledgeable in the field of OJT and training tools and methodologies be established to report on and provide recommendations for:

- the organisation and conduct of OJT;
- the selection and training of OJTIs and;
- the implementation of modern training tools and methodologies to effect a reduced and more efficient OJT phase of training.

Such a group was established in March of 1991 and the Group's work was taken over by EATCHIP (European Air Traffic Control Harmonisation and Integration Programme), now EATMP, at the beginning of 1992. Their report, first published in August 1995, is identified as deliverable 07 in ST05.4000 in the EATCHIP/EATMP Work Programme Document (EWPD) 2.0, Human Resources Domain (HUM), and is included as part of the course documentation.

The Group strongly recommended that, following a minimum of two-years operational validation; the prospective trainer (OJTI) should successfully complete a standardised training programme. The objectives for this programme are annexed to this Report. They can also be found in an expanded form at the beginning of each section in the course documentation.

The Training Programme for the OJTI was developed by a team attached to the Training Sub-Group (TSG) of the HRT of EATCHIP/EATMP, and is

identified as a deliverable in the EATCHIP/EATMP Work Programme Document (EWPDP), Human Resources Domain (HUM). The course development team was made up of representatives from the Civil Aviation Authority, United Kingdom; the Deutsche Flugsicherung (DFS), Germany; la Direction de la navigation aérienne (DNA), France; the EUROCONTROL Institute of Air Navigation Services (IANS); the Luftfartsverket, Sweden, and Swisscontrol, Switzerland.

The Training Programme for the OJTI, formally known as INS-COACH, was first introduced at the IANS in December 1994 and has subsequently been introduced into the training programmes of several national Administrations, two of which are currently validating the course in its entirety. It is foreseen that many more will follow this lead since several further Administrations have expressed a deep interest in having the programme conducted at their national training school or major training units. In July of 1998 the first annual meeting of the users took place and several minor modifications were agreed. The result is this Version 2.0 of the Training Programme for the OJTI.

***Can you afford the self-satisfaction
of believing that there is nothing
you do not know,
the knowing of which could transform
the quality of your coaching?***

Remember, we teach people not subjects

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The generic 'he, his, him' are used throughout this document for the sake of brevity and to avoid situations created by the use of plurals. Consequently for 'he' also read 'she', and for his and him also reads her.

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INTRODUCTION

Welcome to coaching. You have many new experiences ahead of you. Being a successful OJTI is an enormous challenge and yet good intentions are not enough to be successful; you need all the knowledge you can get.

Most OJTIs have learned the skills of coaching through a process of trial and error and sometimes this has been an arduous experience. The OJTI training programme will help you to shorten the learning process and help you to reduce those painful errors.

The programme does not contain all the information you will need to become a successful OJTI. There is much more to learn and the programme is simply a starting point. You will need to watch and talk to other OJTIs, from whom you will learn both effective and ineffective practices; what you must then do is distinguish between the two. This programme will help you to do that by providing you with a foundation in effective practices.

Another way in which you will learn is from your own experiences. As you coach, examine your own experiences and draw lessons from them. Think about ways to do things differently in order to coach more successfully and retain those practices that appear to work well. Some OJTIs have many years of experience but have learned very little because they do not think about it and adjust to their experiences. Others may have much less experience, but learn quickly and adjust accordingly.

Just as your students will not learn to be air traffic controllers overnight, you will not learn all the skills of coaching in this short, two-week programme. You will need to read and re-read parts of the documentation, observe other OJTIs and learn from your experiences through thoughtful self-analysis.

This documentation is a tool for learning and however good the tool is, its overall effectiveness is dependent on how it is used. At this stage ask yourself what you want to do as a result of this training course, emphasising what you want to be able to do better, rather than what you want to know about.

List your questions then refer to the contents page to guide yourself to the section in the documentation in which you may find the answers.

As you undertake this course you will recognise that successful OJTIs are those who can learn new skills, who are flexible enough to change old ways when change is needed, who are able to accept constructive criticism, and who can critically evaluate themselves. Our objective throughout the two weeks is to raise your level of consciousness and we are there to help you through this process. This training programme is a partnership between you, the participant, and us.

***Participate in the experience and
Experience the participation***

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THE LEARNER

This section of the documentation is designed in order that the reader shall:

- **be aware of the role of positive recognition;**
- **understand appropriate concepts that will enhance the effectiveness of learning;**
- **appreciate the role and effectiveness of objectives in on-the-job training;**
- **understand how group interactions work within an Air Traffic Control environment.**

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INTRODUCTION

Many theories have been developed on cognitive principles and concepts seen as being applicable to ATC and, although they are useful, they do require considerable interpretation. For this reason we do not intend to go into areas such as understanding, memory or information processing, etc. Instead we will concentrate upon simple, usable methods that are known to enhance the learning process. Should you wish to investigate these areas further, however, the works of Hopkin, Rasmussen and the work being conducted by the EATCHIP/EATMP HRT are of particular interest.

MODELLING BEHAVIOUR

How can you reward behaviour if the appropriate behaviour does not occur? Think small initially and reward the first signs of behaviour that approximate what you want. Thereafter, give merit to closer and closer approximations of the desired behaviour. In other words, use your reward power to shape the desired behaviour.

Among the essential skills of coaching is this process of shaping behaviour, which involves two aspects: the sequence of steps involved in developing the student's skills and the principles of reinforcement. To become an efficient OJTI, you need to be able to break down complex skills into smaller parts in order to optimise learning and then to help students combine these parts into more complex skills.

Additionally, you will need to understand and use the principles of shaping - the principles that govern the learning process. Here are some guidelines to assist you in coaching more effectively through shaping:

- Break complex skills into smaller steps, thereby increasing the probability that they will be performed correctly in order that success can be rewarded. Thereafter, gradually combine these steps into more complex skills. Continual progress, even in small steps, is far better than pushing for a perfect performance.
- Develop one component of a skill at a time, do not try to shape two components simultaneously. When students fail to make progress after considerable practice, it is often because they are trying to improve *too* many things at once. When you observe this happening, look for ways to break the skills down further so that you can isolate individual components.
- Always put the current level of performance on to a variable schedule of reinforcement before moving on to higher performance levels. This is an essential rule. Once a behaviour is learned, start reinforcing it occasionally rather than constantly and in doing so you will maintain it at its current level. When you are in this position, that is to say reinforcing occasionally and still being certain of getting it, you will be

able to use your reinforcements only on the best examples of the behaviour. This selective reinforcement will push your student's average behaviour in the direction of improvement.

- When coaching in a new skill or combining simpler skills into more complex ones, temporarily relax your standards for giving reward. When students attempt to integrate new skills with existing ones, it may very well be that you observe a slight regression.
- If one shaping method does not seem to work, try another. Remember, students differ in how they learn and there is no one correct way to learn any ATC skill. No matter what the skill, there are many ways to shape the desired behaviour.
- If the performance of a well-learned skill deteriorates, review the shaping. Skills may temporarily suffer for many reasons; the best way to restore them is for you to go back to the basics of coaching.

SOCIAL IDENTITY AND GROUPS IN AIR TRAFFIC CONTROL

When contemplating 'groups' it is useful to reflect on the notion that the usual suppositions relating to group development are not entirely relevant within the context of this training programme. The reason for this statement is that, in the majority of ATC units, the group (team) already exists and has done so for many years. This section therefore goes more in the direction of role behaviours and the role of the individual as well as the social entity or identity characteristic of air traffic controllers.

The Group and the Air Traffic Control Team

A group is, by definition, a collection of people who meet with, in this case, the purpose of fulfilling a work objective and where ***interaction, interdependency and commonality of objectives are vital to the group activity.***

In the ATC team the controller is rarely restricted to a single working position and controllers often move from one position to another. In so doing, each will team with (an)other controller(s) in a process of constant turnover in which each one works with all the others and where the ***control and tasks are shared*** among the team members.

Teams often behave like 'clans' or 'tribes' where the members share a trusted relationship with each other based on long associations. They have a common and tacit understanding of the norms and codes of the team and often others are excluded until they are perceived to be deserving of membership. This perspective has often produced 'John Wayne-like' attitudes that have proved to be obstructive to effective training practices and that prove tempting to the student. The team is a unity which embraces adjacent sectors and units, the crews of the aircraft under our control, technicians and, especially within the context of this training programme, the training organisation.

Common Identity. Norms, Habits and Values

Although the controller is primarily involved in a team, he will identify himself with not only the ATC domain within which he works, i.e. Aerodrome and Approach or Area Control, but the actual workplace, e.g. Bordeaux, Maastricht, Geneva or Frankfurt. It can be said that each unit gives to an outsider the impression of being an entity with a particular profile and a unique culture. Even in environments where the close team is never officially formed, there is still an identity with the profession and the workplace. It is not valuable at this point to develop the relative merits of the two systems. Suffice it to say that each has its benefits and disadvantages.

Many controllers often believe their team to be superior to other teams and will defend its' habits and characteristics against all outside challenges. They will do their utmost to maintain the high standards and reputation the team has achieved. There is a sense of unity where the world of the air traffic controller both small and exclusive. Controllers work together, eat together and often socialise together; it is a world where a common experience develops with its' own history and culture.

Let us look at the meaning of the word 'norms'. Norms are ideas or values shared by the members of a group regarding the expected behaviours of the group and its individual members. There are firstly the official norms, the rules and standard procedures. Then there are the group norms, the operating norms or the 'acceptable face of bending the rules'. These are based on knowledge that is shared, implicit and learned during training. Each member of the team obeys the group norms. They are unwritten but very effective devices for ensuring team conformity where feelings run high about what is considered to be the right and wrong conduct of the team members. Finally, there are the individual controller's norms. This is the space where each individual controller evolves his individual working procedures, the way in which he approaches his work.

Team Cohesion

Team solidarity is based upon the sharing of empathy and a mutual feeling of sympathy. The members of the team become familiar with each others abilities and hold opinions on their respective reliability and competence. This aspect is, of course, very useful since it enables the controllers to recognise when one of their team members is under pressure and requires help. It is as if the team bears a collective responsibility for the individual controller. The team is a self-regulating structure; its culture is verbal and is based upon reciprocal understanding and trust.

Any newcomer therefore needs to learn the team's preferred routines and techniques and be comfortable in working with them before he will gain the acceptance, trust and respect of the other team members. This is especially true of a new student who will not have the confidence of the OJT or other team members due to his immature skills. Proper time is needed for the team and individuals to re-tune their confidence.

Role Models, Collective and Individual Responsibilities

All of the preceding has been a rather elaborate preamble to the idea that each of us, **whether or not** we are at the time involved in training, are existing or potential role models for each new addition to the team. The team, likewise, has a collective responsibility for generating professional attributes in the students.

Let us finally reflect on the qualities of a well functioning team member. He will:

- know how he operates,
- know his own limitations and those of others,
- know the actual rules and procedures,
- ask when in doubt,
- know how his team operates,
- know the tacit rules and procedures of the team,
- understand his colleagues,
- have a total awareness of his own as well as other situation,
- appreciate and respect different controlling styles.

THE LEARNER HIMSELF

When speaking of developing and combining skills we need to look at the learner himself. We all have very individual learning styles but it is possible to make some basic statements about the learner. Think of it as reconstructing a jigsaw puzzle with hundreds of different pieces. Some people are able to take an individual piece, look at the picture on the box and know immediately where that piece fits in. Others will need to build the picture sequentially, classifying each piece before moving on to the next. Learning is very much like reconstructing the puzzle and some learners are able to take a piece, in this case a piece of information, and know where it fits in to the overall picture. This type of learner can be classified as '*Holistic*'. There are others who need to process information sequentially and classify it, building each piece into a unifying structure. This type of learner may be seen as '*Serialistic*'.

Most students fall into the category of serialistic, especially in the early stages of training. They need to build a set of propositions and procedures based upon adequate knowledge of the process before they are able to generate successful new strategies for unusual situations. They need to develop a sound database about the process in a step by step manner. Once that database has been established and once the picture starts to build up, they may move on to a more 'holistic' style of learning where it is easier to fit in new pieces of information.

Do be aware that many OJTIs approach training in a rather holistic way. They have, after all, established and assembled all of the connections that have existed and been built upon over the years. Their approach to training is therefore somewhat unstructured and global, often leaving students to make suppositions for themselves. Little wonder therefore that many students silently come to the conclusion that their successes were not as a result of the training they received, but in spite of it!

There is an inherent danger in the 'holistic' approach in that is that this type of learning may leave gaps in the learner's database or basic knowledge of the process and he will never know what he has missed.

The analogy of learning to the file structure of the personal computer

The acquisition of knowledge may be easily likened to the loading of files onto a disc in a personal computer, where the file consists of pure data similar to that stored in the human brain and range from simple to very complex information.

Once the information increases in volume and complexity, we have to devise a process whereby we are able to access the information rapidly and at the appropriate time.

Similarly, with the computer, a simple programme may be just one file but more advanced programmes require numerous complex files to work

together. It is therefore necessary to be able to link the various pieces of information or files for complex operations. Most computer programs will create a number of sub-directories to store collaborating files in an organised manner; the better the organisation, the better the access to that information.

Since the advent of long and complicated programmes in computers, designers introduced the concept of the *smart drive*. This is a specific programme that checks statistically how often a particular part of the memory is accessed, where the path of information through the various subdirectories is memorised and its' frequency of access recorded. Once a particular piece of information is to be accessed, it is compared to what is stored in the smart drive and, if found, the access is carried out immediately and rapidly following the known path.

Every individual who carries out repetitive tasks has developed his own smart drive area in the memory of his brain. This is the reason for his being able to carry out some actions speedily whilst information he has not used for some time requires a more lengthy search of his memory.

As you will see from [Figure 1](#), the student's situational awareness is created from past mental models integrated with the present conditions and actual

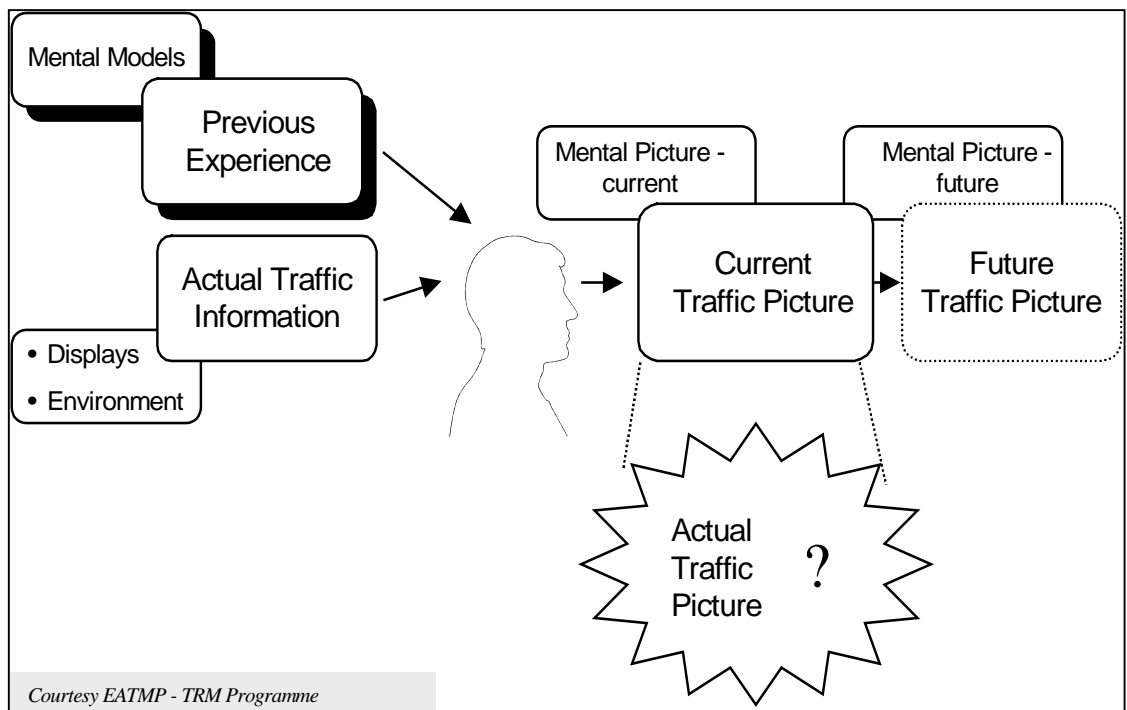


Figure 1: Situational Awareness

traffic. Significantly, the student needs rapid access to past experience and mental models (memory). Obviously, if critical features are missing from the mental model then errors will occur. For these reasons it is important to focus on basic and routine skills in the early stages of training, constantly establishing relationships to and defining parallel elements in previous situations and discussing the similarities and differences. Shifting from standard procedures, for example, increases the attention demanded of the

student and may create difficult to foresee problems on his part. This is because they appear outside of the network for which visual and mental resolution routines are available. Repetition, recall and reinforcement help students to learn and establish that professional database which will stay with them throughout their careers. Look at it this way, if a house is built on weak foundations, its' walls and roof will collapse.

ATC is an extremely complex process and most OJTIs approach the training of a student in a very opportunistic way. There is little structure to the coaching, it is almost like 'if it happens I will use it as a piece of learning'. Therefore, little wonder that students are often confused and slow to grasp the concepts. OJTIs require a structure to be given to them, one that outlines what has to be learned in a sequential manner. It is the responsibility of training management to equip their trainers and students with this structure and this is recommended in the EATCHIP/EATMP report on OJT. This structure contains statements known as '*Training Objectives*' that outline what a student will be able to achieve within a certain time period.

STAGES IN LEARNING

As each of us learns new things, we go through four stages of increasing knowledge, skill and confidence. As an OJTI it is important to know what these are, to be aware that learners go through them at different rates and to find the key pieces of information that help learners move from stage to stage.

	<i>Knowledge</i>	<i>Skill</i>	<i>Confidence</i>
<p>1. Unconsciously Incompetent</p> <p>The learner doesn't know what they are doing and doesn't know that they don't know what they are doing.</p>	None	None	High
<p>2. Consciously Incompetent</p> <p>The learner realises their lack of knowledge and skill and begins to understand the difficult.</p>	Low	Low	Low
<p>3. Consciously Competent</p> <p>The learner has the skill and knowledge to do the task but must think carefully, work through step-by-step and cannot focus on any other task while doing the new one.</p>	Medium	Medium	Medium and increasing
<p>4. Unconsciously Competent</p> <p>The learner has internalised the knowledge and skill, does the task easily without seeming to concentrate and can switch to other tasks, and back again, easily.</p>	High	High	High

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TRAINING OBJECTIVES

Training objectives clearly stipulate to *the OJTI* what elements of ATC the student should be able to do within a given time period. Similarly, they will give *the student* clear goals to strive towards. When the time comes to make assessments or judgements about the student, *the person carrying out the assessment* will have clear benchmarks against which he may make his appraisal. Finally, the overall benefit to the system will be a more standardised approach to training, a possible reduction in training time and future controllers of a more unified standard.

So, what then is the content of these training objectives? There are three elements involved:

Firstly, there will be a **statement of performance** or what task(s) the student will be able to accomplish.

Secondly, there should be a **standard**, an expression of how well that task should be carried out at this time in the student's development.

Finally, it should contain a **set of conditions**, statements outlining the circumstances under which the student is expected to carry out the task(s). This could include items such as traffic loading or complexity or what assistance can be expected from the OJTI.

Many controllers who are inexperienced in training may find the idea of training by objectives somewhat difficult to grasp. They would argue that, whilst in simulation traffic situations may be developed in order to reach certain objectives, traffic in the live environment is far too unpredictable. In OJT the focus shifts from handling specific traffic problems to looking at individual aspects of the student's professional development. Therefore, the objectives will refer to a skill or task where a particular traffic situation may be used to highlight the achievement or non-achievement of the objective. Think of it, if you will, like a sportsman being coached during a game or match. The coach will focus on a particular aspect of the player's performance.

As we have mentioned, this method of training breaks very complex subject material into simpler, more progressive and observable steps, it prioritises matters. No student can be expected to absorb everything at once and no student can be expected to maintain the concentration levels of a qualified controller in one go.

SPACED LEARNING

Often controllers are expected to work and maintain concentration and vigilance in high and low workload conditions for long periods of time without respite. Fortunately this maximum time period has been legally restricted in some Administrations and minimum rest periods have been defined. Frequently OJTs expect their students to follow a similar regime. Let us therefore look at methods of breaking the training down into smaller steps in ways other than objectives.

When students arrive at operational units for their OJT phase they have nearly always received some degree of simulator training, albeit not always 'site-specific'. Most of them have been fed on a diet of simulation exercises which, in general, last for no more than one hour. Your student has therefore been conditioned to maintaining concentration for the duration of these exercises.

When the student commences training he is subjected to a wealth of additional information such as fresh procedures, changed workstations and a new environment, which includes new colleagues and new trainers with different approaches. All of this represents information that needs to be processed over and above learning to do the job itself. If now we add the concept that students have been conditioned to work for a limited period of time, it is easy to recognise that their level and duration of concentration are incompatible with the sudden increase in time spent at a training position.

If you notice or receive signals that indicate the student's concentration is beginning to deteriorate, it would be advisable to offer him a short break in order that he can process the information received up to that point and come back with a refreshed outlook. The idea is that we need to, gradually and over a period of time, extend the student's concentration level to become compatible with those of qualified personnel and the demands of the job. The brain, after all, is like a sponge that can so easily become saturated and in need of relief. Failure to do so will result in unnecessary mistakes that can become frustrating and demotivating. Students learn best when there are regular intervals in the learning process.

In many military environments there is often a period of relative peace and quiet between a squadron departing and returning and coaches often consider this to be a period of mental relaxation on the part of the student. Consider if you would that the student's brain during this time is frequently 'on vacation' and then we expect him to react immediately that renewed traffic situations arise. Perhaps we are asking a little too much and a total break from the environment would be advisable with the student returning before the anticipated traffic renewal, fresh and ready to build a picture.

Even qualified controllers have difficulties sometimes with coping with rapid changes in workload. When a workload peak follows a period of underload; students will often have problems in mobilising all of their cognitive resources.

Let us liken the situation to inviting someone to dinner. Should you know that one of your guests has a very small appetite, you would not fill his plate to the point of brimming over. You would take into account what you know of this person and serve him accordingly. After all, he can always request an additional helping.

Below are some guidelines on overcoming common barriers to learning.

OVERCOMING BARRIERS TO LEARNING

<i>Individual blocks to learning and problem-solving</i>	<i>Ways in which you, the OJTI, may help the student in overcoming these barriers</i>
Perceptual	<p>Together, define all the elements in a situation. Establish relationships, cause – effect linkages. Draw parallels with previous situations and discuss similarities and differences.</p> <p>Challenge assumptions by the student. Ask questions such as: How? Why? Why not? How can you be sure? What if? Keep repeating these questions.</p> <p>Look at situations through the eyes of a novice.</p>
Cultural	<p>Ask questions such as: How? Why? Why not? How can you be sure? Who says we cannot?</p> <p>Identify constraints you feel are acting on the situation. Work through the possible consequences of deliberate decisions to do things that are different from the norm.</p>
Emotional	<p>Encourage the student to try new behaviours.</p> <p>When the student has earned it, give frequent recognition for strengths when he is first learning new skills.</p> <p>Once learned, reinforce these skills occasionally.</p> <p>Respect his suggestions even if you feel you disagree. Help him to work out the possible consequences for himself.</p> <p>If at all possible, if he remains convinced that his particular idea is good, allow him to try it, give it a fair chance.</p> <p>Avoid sarcasm.</p> <p>Ask him how he feels about the situation.</p>
Intellectual	<p>When using technical terms, ensure he knows what you mean and that you know what he means.</p> <p>Make sure you are using all the sources of information available.</p>

<i>Natural helpful maturing tendency of the adult learner</i>	<i>Some ways in which the OJTI can help the learner by reinforcing the adult's natural tendency</i>	<i>Some ways in which the OJTI may in fact hinder the learner, by working against the adult's natural tendency</i>
From dependence to autonomy	<p>Allow, encourage, force the learner to make his own decisions (even if, at times, you disagree).</p> <p>Allow, encourage, force him to think things out for himself (even if, at times, it takes longer this way).</p> <p>Support him in the implementation of his ideas.</p> <p>Respect unusual ideas; give them a fair chance.</p>	<p>Impose your solutions.</p> <p>Speed things up by taking shortcuts for him, thus avoiding the need for him to think things out for himself. Set out to prove that ideas with which you disagree will not work.</p>
From ignorance to insight	<p>Encourage him to think out the reasons for things that have happened.</p> <p>Help him to make links with other things that have happened, to draw parallels with other problems and situations.</p> <p>Give him feedback about his behaviour in a helpful way - even if the feedback is negative.</p>	<p>Ignore opportunities for feedback; give feedback only in a punishing manner.</p> <p>Set out with the firm conviction that you have nothing to learn from him: if, in spite of this you do learn something, keep it a secret to yourself.</p>
From selfishness to altruism	<p>Give reward and praise not only when he succeeds in some personal task, but also when he does things that helps others in their work.</p> <p>Encourage him to think about the implications of his plans or ideas for other people. How will they affect others? How will others feel about them?</p>	<p>Give praise and reward only for individual effort and achievement.</p> <p>Ignore or denigrate the importance of contributing to other people's success.</p> <p>Ignore the feelings and interests of other people when discussing and problem-solving.</p>
From a negative self-image to a positive self-image	<p>Praise him for his strengths.</p> <p>Give non-evaluative feedback about his weakness; that is, try to be factual about these weaknesses, discuss their consequences without implying that he is thereby a 'bad person'.</p> <p>Explore ways in which the weaknesses may be overcome.</p>	<p>Be little his efforts; emphasise weaknesses in him and in his ideas.</p>

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MOTIVATING THE STUDENT

This section of the documentation is designed in order that the reader shall:

- **understand appropriate motivational theories applicable to a training/learning situation.**

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MOTIVATION IN THE TRAINING ENVIRONMENT

What is Motivation all about?

Motivation is an internal inspiration based upon a person's needs and the fulfilment of those needs. Motivation is what inspires a person to act, it instils a belief that what he is doing is important. For both the OJTI and the student, understanding motivation is of interest. If students know what strengthens or weakens their motivation, they can often find more satisfaction and perform more effectively in their work. The OJTI will want to know what motivates the student so that he can get them to perform better.

Motivation is an internal need that is shown as an external expression. The achievement of a goal or gain of an incentive are the external indications of motivation, but the reasons why that person was moved or was motivated to achieve are not always obvious. People are motivated to perform similar actions by very different internal drives. Additionally, similar internal drives may lead to very different results.

We should be aware that as students mature in the work, they grow more independent and want to take more decisions for themselves. They want to take on more responsibility and become more competent. These needs are imposed internally, not externally. However, the satisfaction felt in the achievement of a goal is usually very short lived. The way in which we increase the duration of the individual's motivation lies in part in the different schools of psychology and concepts of motivation.

The Behaviourist School

Developed over thirty years ago, this behaviour modification theory involves the principle of conditioning and reinforcement. *Conditioning* implies rewarding desired behaviour and not rewarding undesired behaviour. Repeated rewards such as praise are called *reinforcement*. Rewards given immediately following the desired behaviour are generally the most effective.

Positive rewards are generally more effective than negative reinforcement, such as punishment. The approach is to reinforce desired behaviour and ignore undesirable actions. Over a period of time, the reinforced behaviour tends to be repeated whilst the not rewarded behaviour tends to disappear. Harsh criticism of undesired behaviour contributes to feelings of restraint and rebellious actions.

Note: Refer to the sections dealing with feedback (differential reinforcement) and personal interactions.

There are numerous concepts of motivation, all of which are aimed at the occupational field. One, however, has been chosen because it has a direct relevance to the training situation. In all learning situations each person has a variety of needs and these are adequately covered by Abraham Maslow.

MASLOW'S BASIC NEEDS

As has been explained, internal need fulfilment is the basis for motivation. Abraham Maslow considered basic needs as being the same for all human beings. Although these needs are met in different cultures, the needs themselves remain the same. The expression of the needs is often influenced by surroundings and past experiences, and is therefore different in individuals. Maslow distinguished these needs in their order of importance so that physiological needs must be in part satisfied before the love needs, and so on. Partial gratification of one need usually leads to the emergence of a higher need.

Physiological Needs

There is not much that can motivate a person whose basic physiological needs have been reasonably satisfied. Ghandi described it in the following way:

'Even God cannot talk to a hungry man except in terms of bread'.

These physiological needs include basics such as food and drink, sleep, warmth, clothing and a 'roof over our heads'. These may be considered as primary physical needs, which are indirectly satisfied with the salary we earn.

Safety or Security Needs

People also want to feel secure and safe from harm or threatening situations. In adults these safety needs are expressed by the wish to be stable and secure. Preference for the known and the familiar to the unknown and unfamiliar reflects the basic need for safety and security. Emphasis on rules, regulations and procedures will assist in the fulfilment of this requirement as will constructive feedback and encouragement.

Social or Belonging Needs

Once a person has satisfied his physiological or security needs, he experiences an urge for acceptance, belonging and friendship. It is important to recognise that individuals require to give as well as receive affection and to be accepted for what they are. Harmonious interpersonal relationships and interactions are important as are involvement with people in the work situation and avoidance of interpersonal conflict. The strength of the social need may be observed in the way people form cliques or groups during breaks or when leaving the workplace.

In part this may be explained by the fact that man is a social being. From the first days of life he is surrounded by others, without whose presence and help he would be unable to survive. The infant does not know anything else and experiences dependence with all its advantages and disadvantages. It will learn that belonging to a group is related to conveniences and the fact of not belonging to the group is connected with problems. These early experiences will be of importance in later life and

Man has a basic need of belonging to a group. For some people it is strong, in others it represents a less pronounced need.

The social need may be more appropriately called Team Spirit Need. Teamwork and team spirit are often more important than individual achievement. Every effort should be given to this aspect of coaching, remember that the student may be absorbed with forming interpersonal relationships and establishing a sense of belonging within the team. The important thing is that, as time goes by, he is able to identify himself with what is happening within the group.

The need for being accepted and confirmed plays a more or less important role throughout our lives. Feelings of acceptance and confirmation are an important background to personal self-esteem and self-acceptance. The desire for acceptance and confirmation appears through an open search for relationships, praise and proof of being accepted.

Esteem Needs

The word 'esteem' means self or internal worth. Maslow classifies this need into two categories, the desire for sense of internal worth and the desire for status, recognition and appreciation by others.

People who value themselves have well-developed feelings of confidence, worth, strength and adequacy. The lack of self-esteem induces feelings of inadequacy, inferiority and weakness. These feelings of self-dislike lead to discouragement and a sense of failure.

Satisfaction of self-esteem needs is achieved through excellence at something, mastering skills and independence. External indicators such as respect, recognition and appreciation by others may also help to fulfil the needs of self-worth. The OJTI, therefore, may appeal to this need through presenting the student with exciting and challenging work situations, ones that are exacting but non-the-less achievable and thereafter giving constructive and non-judgmental feedback.

Self-Actualisation Needs

The need for self-fulfilment, the requirement to realise one's full potential is known as self-actualisation. It is demonstrated by doing a task well and by striving towards more creative endeavours. Self-actualisation is a 'growth' need. People in this category concern themselves with continual personal growth and fulfilment.

The Hierarchy of Needs

Many trainers explain Maslow's five categories of needs in terms of a hierarchy where there is a requirement for one need to be well satisfied before the next in line may become a driving force. This explanation, whilst convenient, is somewhat misleading. One need does not require full accomplishment before the next need on the hierarchical ladder makes itself felt.

When a need is satisfied, it no longer motivates. It is the new unfulfilled need that motivates.

The need network is extremely complex where several needs affect the individual at any one time.

The basic or lower level needs should be satisfied before higher-level needs drive behaviour.

There are many more ways of satisfying higher-level needs than there are for fulfilling low-level needs.

ANALYSIS OF THE MODEL

Physiological

Ensure that the facilities are good, that the student's needs in terms of accommodation, perhaps schooling for children, etc., are being cared for. Ensure, also, that he is aware of rest, recreation and eating/drinking facilities. Enquire as to the general well-being of the student. Recognise any loss of concentration or overload.

Safety/Security

Strive to make individuals feel at ease by reducing tension and anxiety. Try to avoid that they feel threatened or exposed. Encourage group interaction and, if appropriate, create an informal, relaxed but purposeful atmosphere. The 'know-how' and preparation of the OJTI will give reassurance to the student.

Social or Belonging

Reduce feelings of isolation and help them to integrate into the group. Allow ample opportunity for interaction to take place both during working time and in socialising during out of work hours.

Esteem

Set tasks or goals that are neither too easy nor too difficult so that the student feels a sense of achievement. Recognise that achievement by giving positive feedback. Remember, achievements that go unrecognised over a period of time have a demotivating effect.

Make the student have a positive feeling about himself. When giving feedback, never put the student down or destructively criticise. Criticism should be given in a manner that the student recognises the flaws himself and in doing so accepts the criticism and commits himself to improvement.

Self-Actualisation

Give them the opportunity to set their own goals and support them in an appropriate way to achieve those goals. Most people are goal-orientated, they strive to achieve. The role of the OJTI, therefore, is to harness the drive that this need activates and not to turn it off and to aid the student in realising his own ideas and different ways of working.

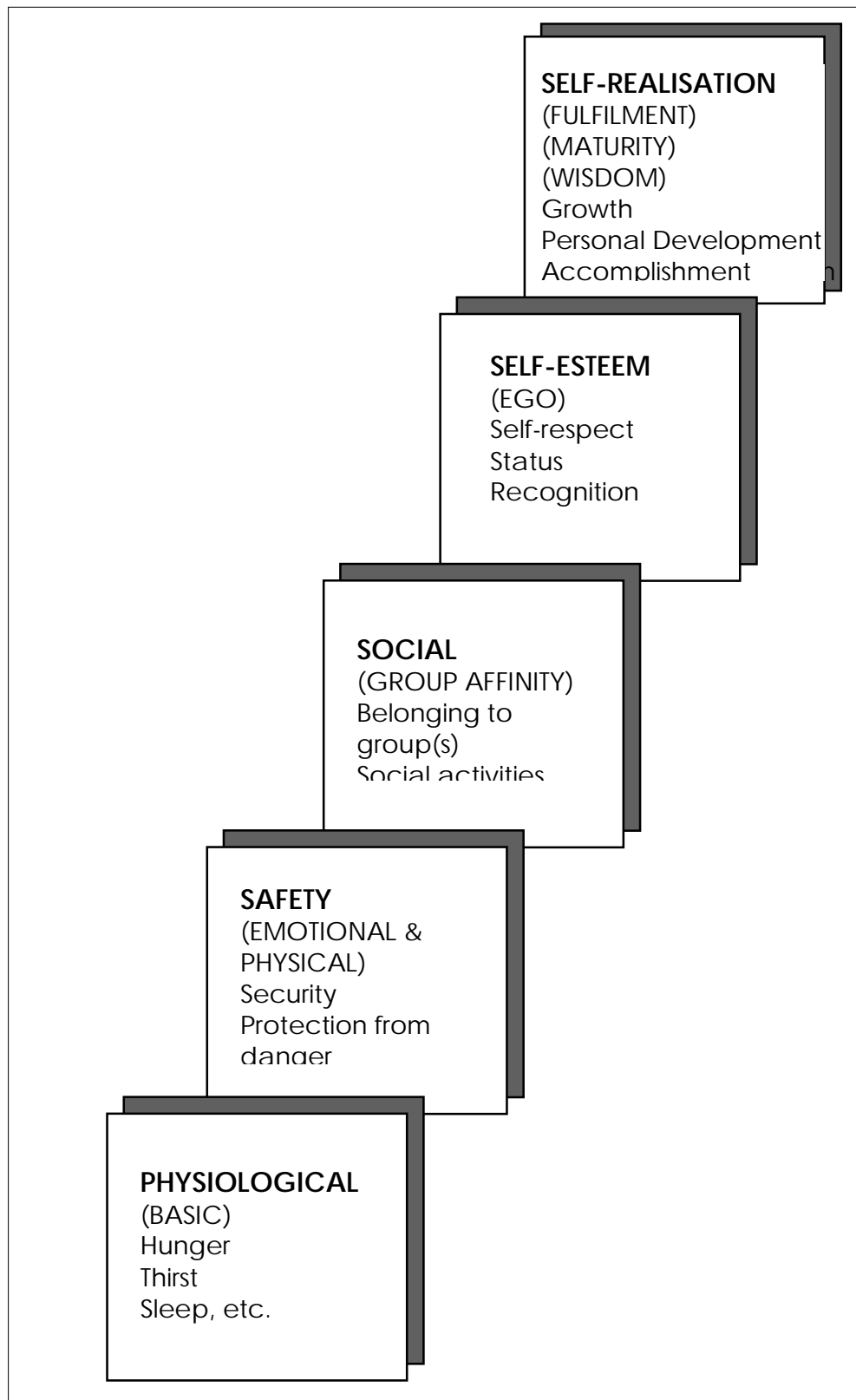


Figure 2: The Needs Hierarchy

PERSON TO PERSON COMMUNICATIONS

This section of the documentation is designed in order that the reader shall:

- **recognise the importance of effective verbal communication;**
- **be aware of the influence of non-verbal behaviour in the communication process.**

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INTERPERSONAL COMMUNICATIONS

The meaning of Communication

Communication is a simple affair, isn't it? If only it was that simple. Often the receiver only *hears* what the other person has said, there is no guarantee that he understood or will act upon the statement. Over 70 % of our working lives are spent receiving messages and although we are well educated in sending verbal messages, few of us learn how to receive them.

Communication is therefore the process of transferring information and understanding *from* one or more persons *to* one or more persons. In its simplest form, one person transfers information to another. Comprehension is the only test of the message's success. If a message has been *understood*, communication can be said to have been successful. If not, communication has failed.

Communication is so common and yet so complex. We assume that because we communicate so frequently that we are experts in the process. We do, however, have an inclination to concentrate upon the process of transmitting (speaking) rather than receiving (listening and understanding).

This section is about the not-so-simple process of interpersonal communication, of sending and receiving - listening and understanding - as well as non-verbal communication which is additionally dealt with under 'Transactional Analysis'.

Meanings lie within us

How many times have you asked someone, 'What do you mean by that?' How many times have you had to answer that question yourself? Most people, when confronted by such a question, reassemble their thoughts and attempt to get their message across using different words. The meaning doesn't change, but the words do. Meaning lies within ourselves, not in the words we use to express that meaning.

Meaning is what is intended to be understood and is always subjective, e.g. the word '*good*' can mean 100 different things to 100 different people. It can also mean several different things to the same person under different circumstances.

A word's subjective meaning is the personal significance that it has for the individual. Almost every word that we use has a different intellectual and emotional meaning for each of us. Even the most ordinary, everyday terms have an astonishing variety of meanings since *the meaning attached to any object or experience is so highly personal*.

The more our messages relate to or overlap the other person's mental, emotional or intellectual experiences, the more we are able to be effective in our communication with that person.

Meaning, however, constantly changes and is never permanently fixed. Since no two people can ever give *exactly* the same meaning to anything and because words themselves have ambiguous meanings, *understanding* someone's meaning requires paying as much attention to the *person* speaking as to the words being spoken. Tone of voice, facial gestures and body language communicate as much if not more meaning than the words themselves.

The Communication Process

We can think of simple communication as being a sender, the channel being used to pass the message and a receiver, where the channel being used is the spoken word. This is a perfectly adequate way of considering what happens when we want to pass a simple piece of information.

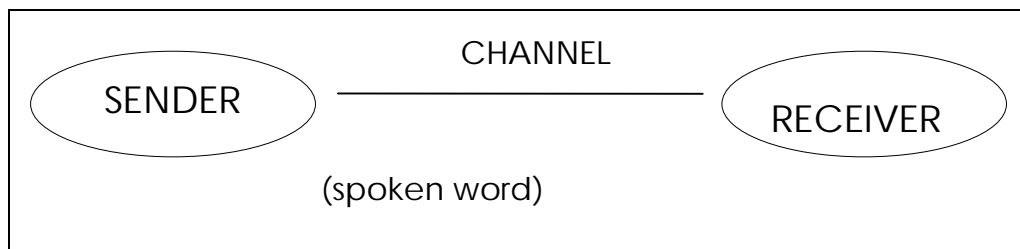


Figure 3: Simple Communication

However, we frequently wish to pass very much more complex information where we try to transfer an idea in the mind of the sender to that of the receiver.

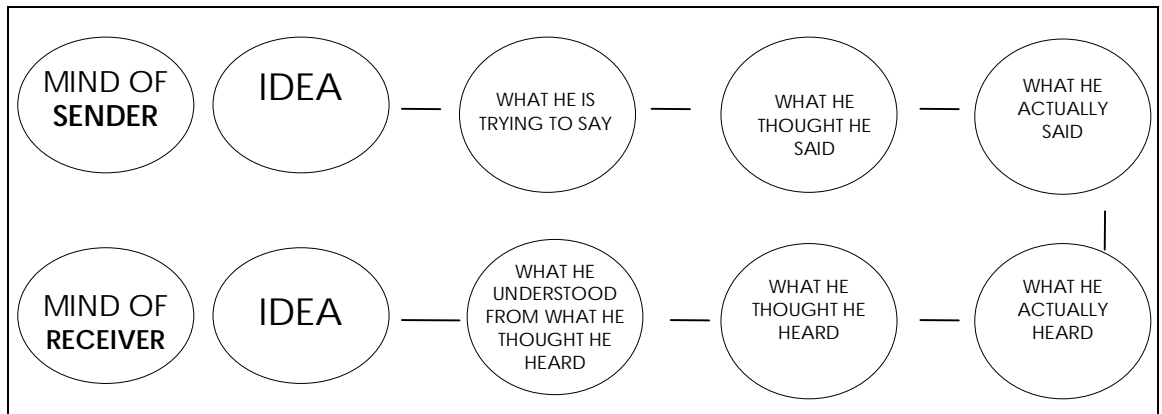


Figure 4: More Complex Communication

When we seek to break down interpersonal communication into the stages described, it becomes clear that there are many potential obstacles to effective and clear verbal communication. These include distortion, language or semantics, defensiveness, noise, mistrust and other emotional responses. For example, an OJTI may say to his student, 'I would like to take the time to discuss your performance with you' meaning, perhaps, an intention to discuss the next step in the training programme or 'Where do we go from here?'

On the other hand, the student may interpret this as 'Is he going to criticise me for poor performance?'

If we are to improve our skill as communicators we should be aware of these obstacles in order to avoid them in future. At this point let us examine each of these barriers.

BARRIERS TO COMMUNICATION

Distortion

There are so many distractions to the communication process. Environmental considerations, demands on our time and even our own thought processes represent just some of the things that can distract and subsequently distort the action of communication. Stereotyping is another, unfortunate type of distortion. We often have preconceived ideas or notions about people, situations or cultures, which get in the way of the truth. Often our mind is made up, we note and hear what we want to hear.

Language or Semantics

It is very tempting to believe that because the sender and receiver share the same mother tongue, this provides the basis for understanding. All of us have come across situations where communication has broken down because of problems relating to the words used, perhaps due to a lack of precision on the part of the sender.

Every profession has its own specialised language, especially ATC, and this is useful. For example, imagine the difficulties doctors would have if they were not able to use specialised medical terms, incomprehensible to the non-professional, to communicate with each other. The thoughtless use of specialised language, however, results in a breakdown in communication. We need to use words that we believe the receiver will understand.

Emotions

Perhaps the most important emotional factor in communication is desire. If the desire to understand one's self and others is strong, then understanding usually results. However, one of the largest drawbacks to effective communication is that, as human beings, we fail to separate ourselves from our emotions. In fact, we identify with and *become* our emotions. Often the intensity of our feelings colours everything we think and talk about. When we talk about a problem we cannot help seeing it in terms of our past experiences and in terms of how we feel at that very moment. This of course can make it more difficult to see the other person's point of view.

Many words have an emotional content in the mind of the receiver, which can also create a barrier. We should never lose sight of the fact that people *feel* as well as think. Any message is going to produce some sort of

emotional as well as an intellectual response in the mind of the receiver as well as in that of the sender.

A major factor is how they see each other. Perception is an individual view of facts and emotions, it is the way we interpret circumstances to be - either accurately or in a distorted manner. Our value systems also have a profound effect on what we see or hear happening. In other words, we frequently see and hear what our backgrounds would have us perceive. For example, if we believe people with a strong regional accent to be less educated, we may find it difficult to accept such a person as an expert in his field.

Past experience and 'history' have a similar significant effect on communication. If someone has shown himself to be wrong in the past, we may doubt what he has to say now. We build up expectations about people and we often react accordingly.

One of the major emotional obstacles to communication is fear. There is fear of the unknown - until we get to know someone, we may feel prejudiced, mistrustful or suspicious of him. There is also fear of looking foolish - that people may dislike or disagree with what you have to say - and this inhibits you from saying it, even when it could be a very useful contribution. The relative status of sender and receiver plays an important role in the overall effectiveness of the communication.

The Hidden Agenda

This refers to the undeclared objectives in the sender's mind about communication. These arise because of the personal values and attitudes of the individual. One particular item which frequently occurs on the hidden agenda is the '*win - lose*' syndrome.

Beneath the communication is a conflict - 'If you agree with what I say, I win; if you don't, I lose'. What then happens is the conflict takes over from the communication, the desire to win the argument takes over from the need to communicate. We all of us take along our hidden agendas when we communicate, but we need to be quite aware of what they are so that they do not unduly inhibit communication.

The Situation and Noise

Good communications require time. If either the sender or receiver is in a hurry or not prepared to give communication the time it requires, it will be impaired.

Features of the physical situation may also affect communication. Often the sender must compete with a number of other stimuli in getting the message through to the receiver; that is, there is physical noise or other externally generated sensations in the process. Physical noise is but one of the many sources of confusion and is therefore a barrier to effective communication. Distractions too make matters worse, as anyone will tell you who has been speaking whilst cups of coffee have been brought into a meeting.

Self-Disclosure

When people communicate with each other, especially face to face, their emotional state is exposed to a certain degree. This exposure is to some extent disturbing since our culture places a high value on self-concealment. Yet if we were to reveal more of ourselves to each other, we would understand each other better.

When people wish to reveal themselves to each other, they talk about personal matters such as beliefs and fears, worries and anxieties and perceptions about work, themselves and about each other. To do so, of course, requires an atmosphere of trust and acceptance otherwise our mutual self-defence systems will raise automatic defensive barriers, thereby inhibiting communication.

LISTENING

Listening is an active and not a passive activity and can be described as a combination of: *hearing* - the actual reception of sounds; *understanding* - the interpretation and comprehension of the sounds; *remembering* - the retention of what has been heard; and *acting* - responding in some way to what has been heard.

Sometimes people think they are communicating when all they are really doing is talking a lot and getting some feedback on what they have said. Feedback is important of course, but there is so much more to listening than just feedback. We are very wasteful in our communications, wasteful in both sending and receiving.

In receiving we simply don't listen carefully. How many times have you had a conversation with someone and not heard a word that was said? Have you ever felt that the other person wasn't paying attention while you were speaking? Most of us have had these experiences from time to time. Listening is a form of *paying attention*, which is an active process involving much more than hearing and seeing. When we pay attention to each other, we focus our awareness on what is being said and the person sending the messages and exclude other internal or external stimuli. This is not easy since our senses are constantly scanning the environment for incoming stimuli and our minds are often preoccupied with our own thoughts.

The ability to listen is not an inherent quality, it is a learned behaviour, a skill that must be developed. Unfortunately, it is not a skill that is developed well in our schooling systems where we traditionally learn reading, writing, speaking and numerous other abilities.

Most of us can speak at a rate that is considerably less than the rate at which we comprehend. This allows us to take mental excursions into other areas as we listen. If we are preoccupied in this way, we can slip away from the conversation and start thinking about another topic.

Opinions and prejudices may also cause poor listening. The style of the speaker's clothes, facial expressions, posture, accent, mannerisms, etc., may cause us to react emotionally and tune out from the conversation.

There are few specific rules to follow for effective listening, because what might work for one person may well not work for another. There are, however, some general statements that can be made that will help to be more successful in your listening.

ACTIVE LISTENING

- **Maintain eye contact.** No doubt you've talked to people who frequently have looked down or generally avoided eye contact. Undoubtedly this left you with the feeling that the other person wasn't interested and possibly that you weren't of importance. When you make eye contact throughout a discussion, you visually convey respect for what the other person is saying, and you listen better. You see the other's expressions, gestures and body language. Furthermore, you increase the probability that you will get more respect when you speak.
- **Avoid interruptions.** You've undoubtedly found yourself talking to another person who couldn't wait until you finished speaking. Such a person doesn't listen to your words but looks instead for an opportunity to break in. Give the other person a chance to articulate, don't try to complete sentences the other person is slow to finish. When you try to guess what the other person is saying, you create resentment, slow down the process and risk obscuring the direction the conversation is taking.
- **Be aware of your body language.** There are at least three things people do that they think will encourage others to talk but that, in fact, intimidate the talker. The first is leaning forward. You believe it shows you are attentive, but often the talker suspects you are ready to leap into the conversation as soon as he pauses for a breath. The second misconception people have is that smiling is friendly and encouraging. The talker, however, may interpret this as being that either you find his message amusing or that you are not taking it seriously. Finally, refrain from nodding frequently and saying things like, 'Right', 'I see' and 'Uh - huh'. If you repeat statements such as these, you may grow tiresome. The other person may wonder whether you are, in fact, listening or merely appearing to.
- **Ask encouraging questions.** If the student finds it difficult to talk, help by asking questions that indicate you want to hear more such as:
 - 'That's interesting, tell me a little more'
 - 'Would you explain a bit more about that?'
 - 'I'm not sure I fully understand, could you explain further?'

Encouraging responses don't always have to be questions. From time to time it is useful to nod slightly (but not too often) and say, 'Go on,' or 'Take

your time, I'm listening.' These are conversational aids we call 'non-directive conversation'. You are not leading the other person in the direction of your choosing but merely encouraging him to talk more freely.

- **Avoid shut off or gratuitous comments.** Some responses actually discourage the student from talking. There are obvious statements or responses which should be avoided such as:

 'That was wrong,' or 'You shouldn't have done that.' (Judgement);

 'If I were you

 'That wasn't very clever' (Put-down);

 'That reminds me of a time

- **Limit distractions.** Don't look into the distance or carry on with something else whilst the other person is talking. Find a private place to talk about job-related problems not only to provide confidentiality but also to avoid looking at other people passing.
- **Provide closure.** Let the other person finish talking about a particular subject before introducing a new topic. If the conversation skips from subject to subject neither person will feel a sense of closure. Make sure, therefore, that everything that should be said on a particular subject has in fact been said before moving on.

Even though we feel we are tuned in, we are often guilty of not attending to what is being said because we are thinking about what we are going to say next. We need to develop abilities wherein we listen and respond to what is being said. Frequently statements are met with 'Yes, but ...' often meaning, 'You have had your turn to speak and now it is mine'.

Nevertheless, some people are good listeners and what sets them apart is their ability to focus their attention on the speaker and not on themselves. If we are to become good listeners, we need to move away from obsession with ourselves, and focus on the other person.

The second part of effective listening is understanding what is being said. At the very least the receiver will be responding with non-verbal information such as nodding the head, looking angry, frowning or looking confused.

Opening up the feedback channel allows the receiver to clarify doubts or uncertainties in his mind. In this way there is a better chance of transferring the idea in the sender's mind into that of the receiver.

SUMMARY

Communication is the process by which information and understanding are transferred from one person to another and is a key mechanism for establishing and maintaining good social and working relationships. If the messages being communicated are not understood, then the communication is poor or non-existent.

The meaning of a message is always subjective because meanings reside within people, not in words. A word's meaning is the significance that word has for the sender and receiver, and that significance will vary from person to person. Pay as much attention to the person as to the verbal message itself.

Distortion, noise language defensiveness and emotional responses are barriers to effective communication as is failure to listen.

Effective listening requires focusing and paying attention. Although there are no hard and fast rules to effective listening there are general guidelines for developing good listening habits.

Body language is interpreting a person's attitudes through observation of his body language. Non-verbal clues are usually more honest than verbal clues. Remember, however, to avoid rigid interpretations of non-verbal clues, particularly those based on a single clue.

For more information on communication, see Section 'Personal Interaction'.

PERSONAL INTERACTIONS

This section of the documentation is designed in order that the reader shall:

- **be aware that attitude has a direct effect on the learning process, realise how different personal styles influence interaction;**
- **recognise the impact of individual coaching styles on the learner;**
- **understand the importance of building positive relationships;**
- **be aware of the influence of non-verbal behaviour in the communication process;**
- **be aware of the influence of positive or negative recognition;**
- **recognise the development of interpersonal conflict and be aware of the general principles of conflict resolution;**
- **recognise the existence of direct or defensive coping;**
- **understand the Self-fulfilling Prophecy or 'Pygmalion Effect'.**

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PERSONAL STYLES

Communication Channels

One way of understanding how we interact with other people is to imagine that people are television sets. The various broadcasting channels then represent the different communication channels, or personal styles, that people have. Each person seems to select the channels that suit them best. So, one person may choose a comedy programme, another a serious drama, another a musical channel, and so on.

When we meet someone, we respond to these personal styles in the same way that we might to the television programme. If we like their particular communication channel, we will expect to get on with them. For example, if both of us prefer a channel that plays old movies, then we will feel we have a lot in common.

However, if we adopt different styles, we may not want to interact much. Someone who likes documentaries may not feel comfortable with a colleague who adopts a less serious approach. Someone who selects a comedy channel may think anyone who prefers the news channel is boring.

Skilful communicators are the people who have the greatest range of channels available to them. They are quick to identify the channel that someone else is tuned to, and flexible enough to switch quickly to a corresponding channel themselves. In this way, other people find them easier to interact with.

Unskilled communicators tend to stay within a restricted range of channels. They may even be stuck in just one style. They make little attempt to match other people. Instead, they expect other people to change to suit them. This inflexibility limits their effectiveness when dealing with others.

Occasionally we meet someone who does not seem to tune in to a channel properly. We pick up conflicting signals, just as when a television is not properly adjusted. We then find it difficult to know which programme to pay attention to. Or it feels as if there is a lot of interference with the communication.

Ego States

The technical term for these communication channels is ego states. An ego state is simply a way of being. We really have many ego states, just as there are many different programmes on television. However, we can cluster them into several groups, rather like the way some television channels specialise in particular types of programmes. It is the clusters that result in people have their own personal styles.

We have three main clusters, known as Parent, Adult and Child ego states. Parent and Child each subdivide because they contain two styles each: Controlling Parent and Nurturing Parent, and Adapted Child and Natural

Child. This gives us a total of five personal styles, each of which in turn may have a positive and a negative version.

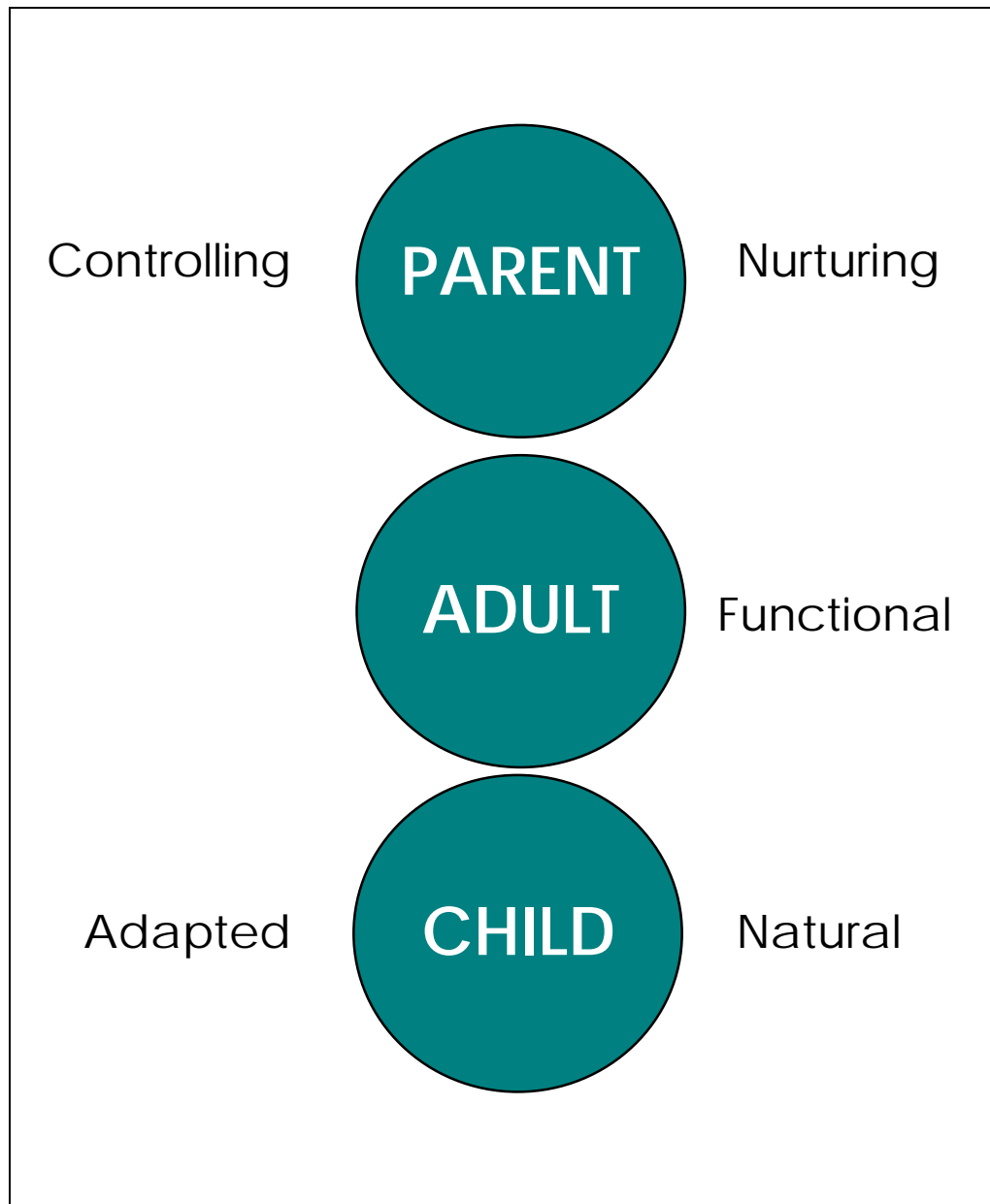


Figure 5: Ego State Clusters

Our ego stages develop as we are growing up. We start as babies with Child ego state, which becomes a cluster of our needs and feelings, and our responses to what happens to us. Later, we add Parent ego state, which is made up of copies of the behaviour of the big people around us.

We often practice these when we are young, and then replay them almost exactly when we are older. We also develop an Adult ego state, which consists of our ability to process information, understand what is going on, and make decisions about appropriate ways to act.

Natural Child

Natural Child is our first ego state to appear. As soon as we are born, we begin to show our feelings - indeed that is about all we are able to do at first. As we grow, more emotions emerge. We start by showing whether we are hungry, uncomfortable, and contented. Then we begin to show pleasure, by smiling and laughing. We also exhibit fear when something startles us, or if we are afraid we have been abandoned. Soon, our curiosity and inquisitiveness becomes apparent. We are also naturally friendly, and sometimes we get very angry when things don't go the way we want them to.

As a grown-up, we still have these characteristics available to us. We may not always display them, but they are still within us. This personal style is very appropriate when we want to be friendly; it has a very different quality to the forced politeness that people sometimes exhibit. Natural Child is also helpful when we are learning, because it contains our curiosity, our willingness to keep trying even if we cannot do something at first, and our excitement at mastering new skills.

However, if we adopt Natural Child inappropriately, we may seem to be immature. Grown-ups are expected to have more control over their emotions than children do. A small child may throw a toy across a room in temper when they can't make it work - but a grown-up doing the same thing with a computer would probably lose their job!

Adapted Child

Most parents realise that children have to learn to curb their natural instincts. They therefore teach their children how to behave in ways that are socially acceptable. This is the process whereby we acquire our Adapted Child ego state. We build up a new set of behaviours that will enable us to be polite and courteous, to do things in ways that match our culture, and to fit in with other people. This process of adaptation is usually continued at school, where we are expected to conform to rules and the expectations of our teachers.

Sometimes this process is overdone, so that a child grows up into an anxious, overly adapted individual. Or the child may decide to resist the 'programming' and become very rebellious. When they are older they may then argue a lot or refuse to follow instructions. Occasionally, the child may withdraw and hope not to be noticed; in later life they may be so quiet at work that they are overlooked.

Our Adapted Child ego state is often stimulated adversely when we enter a learning situation. It is as if we replay scenes from our childhood. We may feel young and little again without quite realising what is happening. The teacher-pupil relationship may get replayed subconsciously. If we did not enjoy school, or felt inadequate, we may re-experience the same feelings and behave in the same ways. Trainers and OJTIs need to understand this effect so that they can counteract it by reassuring the student about the learning process.

Nurturing Parent

As we grow, we begin to notice that the grown-ups around us behave in certain ways. At some point, we start to copy them, as if we already understand that one-day we too will be grown-ups. We start the process of developing our own Parent ego states. Nurturing Parent is based on how we see the big people around us caring for others. We experience them nurturing us, and then notice that they also do this with others. We may copy the patterns by applying them to our toys, our pets or maybe our younger brothers and sisters.

Cultural expectations about gender often have an impact here, as we may well have grown up with a tendency to associate Nurturing Parent behaviour with women. Such stereotyping of male/female roles is unfortunate because it limits our available options. Nurturing Parent is not just about looking after someone - it also contains many useful behaviours such as encouraging and reassuring people when they have to tackle new tasks or responsibilities.

On the other hand, too much Nurturing Parent will mean that we smother people. We may be over-protective and have such low expectations that they do not learn and develop. An OJTI needs to set challenging objectives and encourage the student to achieve, rather than telling the student that they are not ready yet and 'helping them out'.

Controlling Parent

Controlling Parent ego state is built around the ways in which grown-ups take care of others by setting boundaries. Thus, when we are small our caregivers protect us from danger by having rules, such as not allowing us to play with dangerous objects or in the street. Later, they may insist we behave in certain ways, that we study hard, dress in the way they decide, and so on.

The positive side of this style is that it does keep us safe. In a working environment, we need a clear understanding of the rules and regulations if we are to avoid serious mistakes. It is better to be told firmly what is required than be left to make unnecessary errors simply because we did not know enough about the situation.

Too much Controlling Parent, however, and we may just stop thinking for ourselves. We may become afraid to act at all in case we get it wrong; we may react in a rebellious way to having so many 'rules' set for us; or we may bury our initiative and common sense and slavishly follow rules even when they clearly do not fit the present circumstances.

Functional Adult

The final part in our set of ego states is Functional Adult. Called this because it was originally identified as the typical behaviour of a grown-up who is in touch with reality, this ego state actually shows up first when we are still children. It is our rational mode. We develop it through thinking and

questioning - such as all those questions that small children ask about 'Where does the sun go at night?' and 'How are babies made?'

As grown-ups, our Functional Adult is the personal style most suited to problem-solving. For example, when we are given a new task we may ask how to do it so that we can better understand the requirements. When faced with conflict, Functional Adult will seek ways to resolve it that will satisfy both parties. Internally, our Adult may monitor our emotions so that we maintain a reasonable and reasoning attitude.

The drawback with Functional Adult occurs when it is over-used, or applied when being logical is not the best manner to adopt. The person who is constantly Functional Adult comes across as overly analytical - the sort who analyses jokes instead of laughing at them. An example of inappropriate use of Functional Adult is when a steward quotes air safety statistics to a scared first-time flyer instead of using Nurturing Parent to reassure them.

Personal Styles

In summary, we have five personal styles, or ego state clusters, available to us, each with effective applications and some potential drawbacks:

1. *Natural Child*

Our natural friendliness, our enthusiasm, our curiosity and creativity versus the risk of seeming over-emotional and immature.

2. *Adapted Child*

All the ways we are polite and fit in well with others versus the danger of submissiveness, rebelliousness or simply being withdrawn.

3. *Nurturing Parent*

Caring for others, reassuring and encouraging them to tackle new tasks versus smothering them with concern and not allowing them to develop.

4. *Controlling Parent*

Being firm, setting clear boundaries, being specific about requirements versus being autocratic and rule-bound so that initiative is stifled.

5. *Functional Adult*

Adopting a rational, problem-solving approach versus being coldly analytical.

TRANSACTIONAL ANALYSIS

Analysing Ego States

We can use the concept of ego states, or personal styles, to analyse transactions between people. This enables us to consider alternative responses when our interactions are not as successful as we wish.

To 'see' our analysis of a transaction, it helps to imagine that our ego states are stacked one above the other in sets of three circles.

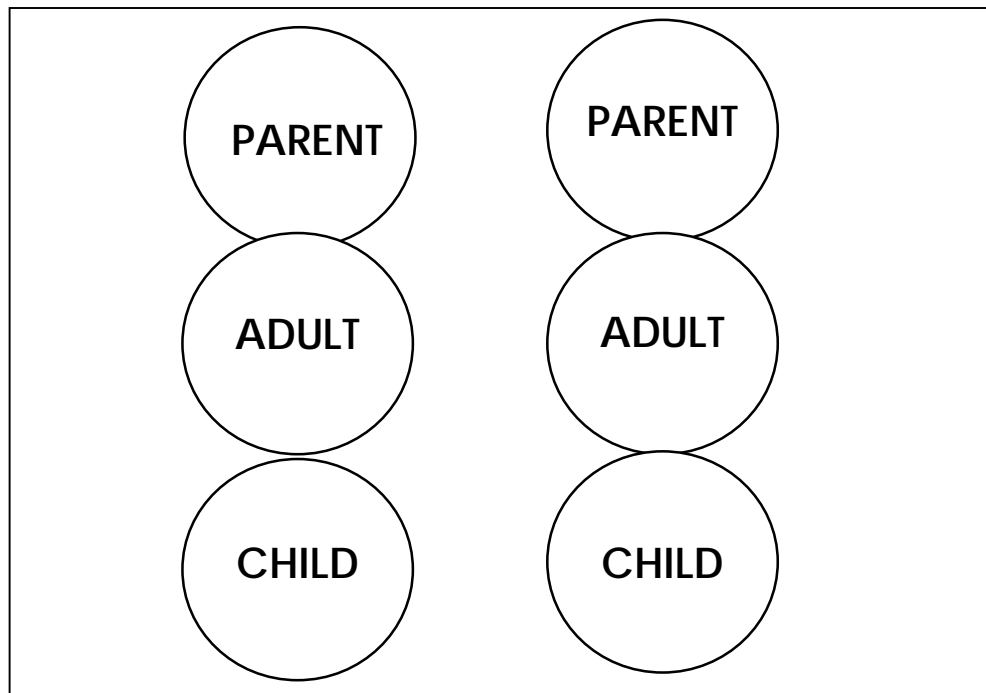


Figure 6: Ego States

We can then add arrows to indicate our communication. This will help us see whether we have a match or a clash of ego states. It also prompts us to consider what other options we have.

Complementary Transactions

Complementary transactions occur when the ego states involved in an interaction fit together. When this happens, the lines on Figure 7 will appear as parallel.

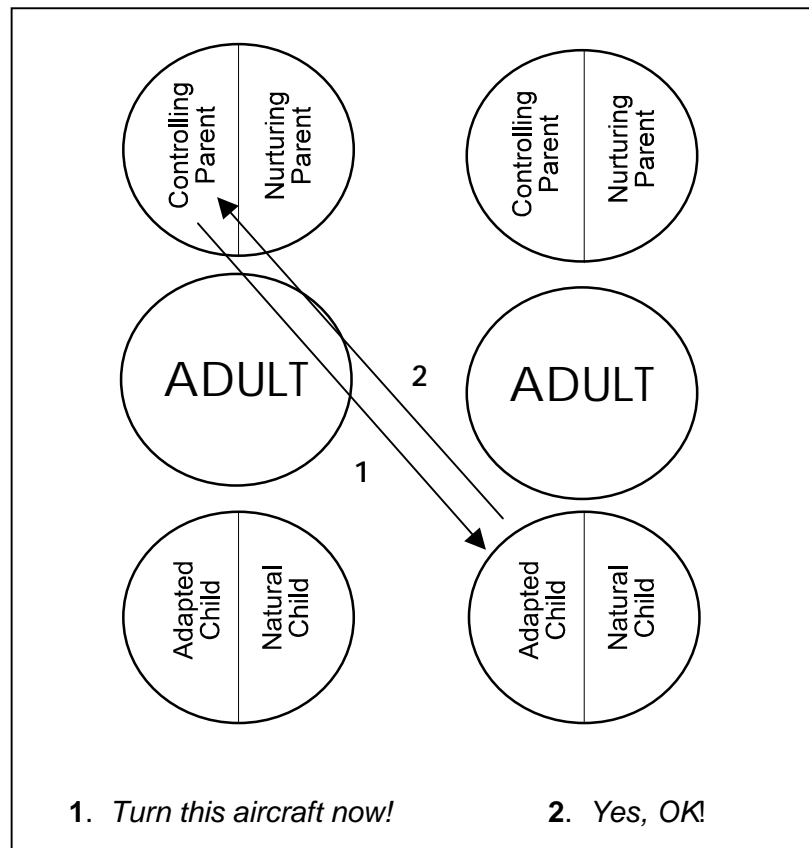


Figure 7: Complementary Transaction

Not all ego states will connect in this way. For Parent and Child ego states, the successful connections will be between the same clusters, i.e. Nurturing to Nurturing, Natural to Natural, etc. Even more importantly, Parent and Child do not connect to Adult. We can only interact directly with our own Adult channel if the other person is willing to do the same.

With a complementary transaction, the interaction can continue until it is completed. This will generally be useful, as we will be able to bring our conversation to a satisfactory conclusion. However, there are times when a complementary transaction is decidedly unhelpful. This occurs when the substance of the communication is negative.

Imagine the scene when the OJTI is in Controlling Parent and the student is using Adapted Child - but the content of the conversation is about how useless the student is. In this case, the interaction may continue for some time, with the OJTI haranguing the student and the student responding in a depressed, submissive way. This will not improve the performance of the student! Instead, it is likely to alienate the student, and make them even more nervous so that their performance gets even worse.

Crossed Transactions

Crossed transactions take place when the ego state that responds is not the one addressed. For example, an Functional Adult to Functional Adult question about when a task will be completed may get an aggrieved Adapted Child to Controlling Parent response about being harassed.

When diagrammed, the lines between ego states will be seen to cross.

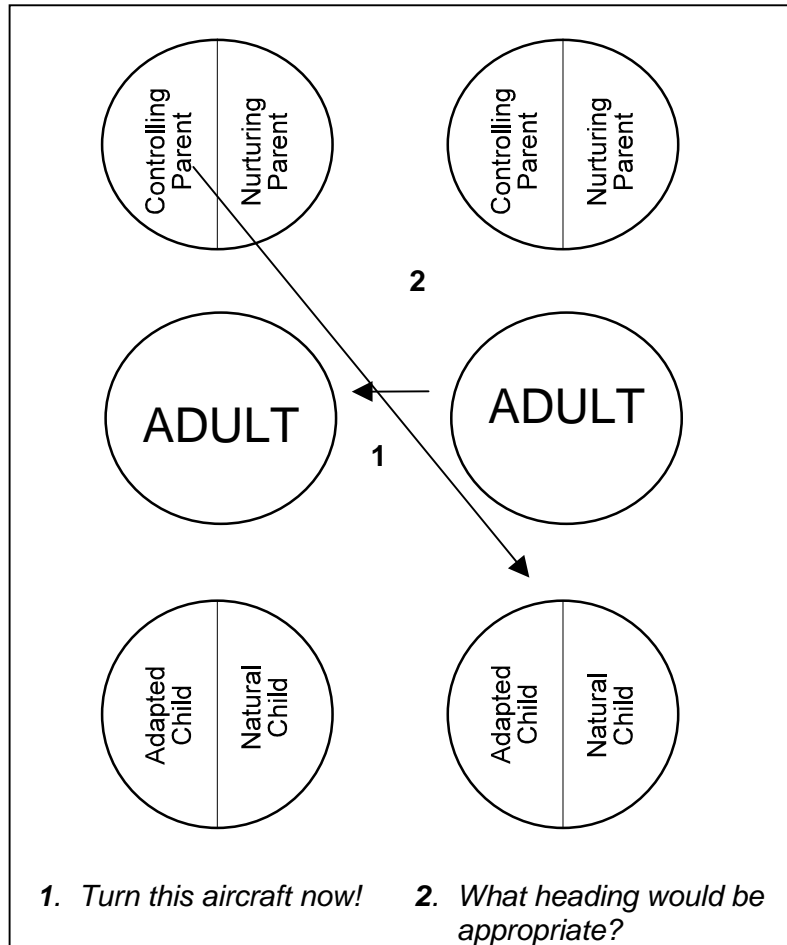


Figure 8: Crossed Transaction

With a crossed transaction, the communication will break down or change course in some way. With our task completion example, one person may get so angry that they walk away, or an argument may develop about whether the question is a form of harassment, or the conversation may escalate into a conflict about the respective rights and responsibilities. The original question may never be answered!

A crossed transaction may also be useful. The earlier example of an OJTI who is haranguing a student shows this. If the student wants to get some constructive information about how to improve their performance, they are going to need a shift in ego state from the OJTI. To get this, they need to cross the transaction. Perhaps they could use Functional Adult to Functional Adult and ask the OJTI a direct question about what they should do differently next time.

With luck, the OJTI will then respond from Adult instead of Parent and give them some usable feedback.

Effective Communication Channels

We can in fact identify the four main channels that give the greatest chance of successful interactions. These are:

1. Controlling Parent to Adapted Child

Use this when it is appropriate to be firm, to set out definite requirements or rules, to delineate boundaries, but make sure these really are justified and not just the personal preferences of the OJTI.

2. Nurturing Parent to Natural Child

For encouraging someone to tackle new tasks, for reassuring them when they make the inevitable mistakes that go with learning, and for creating an atmosphere in which a student will feel secure enough to ask for help when they encounter problems.

3. Functional Adult to Functional Adult

This channel signals that the OJTI expects the student to be able to think through problems, identify options, and discuss things with the OJTI. It therefore invites the student to ask questions, show initiative and take responsibility for their own learning.

4. Natural Child to Natural Child

For being genuinely friendly, for sharing the excitement of learning and achievement with the student, and for celebrating success.

Radio Telephony in Air Traffic Control

It is often said that when we enter our car we seem to change. Similar changes apparently occur when the controller is working. The most obvious indication is the change in the tone of voice when communicating using the R/T, instructions seem to become orders, almost as in the tone indicates that the receiver should better obey, or else!

Analysis of some of the most important transactions of a controller whilst on the job indicates the following: At the start of his duty the controller builds up a mental picture of the traffic. From this picture he makes decisions for control actions. In essence this is the cognitive part of his job. What the onlooker will see and hear could be described as the behavioural part of his job, the communication of decisions to pilots and others.

The controller is, at the very moment, the only one to have a picture of the traffic situation from which he controls by giving instructions such as climb, descend, turn, etc., and by passing relevant information. Orders are dominant in the conduct of the R/T communication and orders are communicated through our Parent ego state, notably the Critical Parent, and this is what the onlooker would hear in the tone of the voice of the controller. This communication style is an effective style when one wants to be firm and decisive, surely necessary when in control.

Another reason for the controller to switch to Critical Parent mode lies in the concentration needed in order to maintain the mental picture. Nearly all auditive and visual channels are occupied, external interference is unwanted and this fact is communicated non-verbally, a frown, a blank gaze, controlled facial muscles and verbally with, again, a parental tone of voice. All of these signals clearly indicate 'don't disturb, I'm concentrating'.

The change in intonation is unintentional, it is an automatic switch that comes on with the dominant Critical Parent ego state. This automatic switching is often useful, because our reactions are quick. It can also have a very negative aspect because in Critical Parent we base our decisions and communications on past facts and events that may differ incidentally from present facts and events. Remember, actual information is received through our Functional Adult ego state.

HIERARCHIES OF EGO STATES

When we were small children, we spent a lot of time in Child ego state while the grown-ups were in Parent mode. This pattern continued through our schooling. Now, whenever we are put into situations that have similar connotations of someone being more experienced or knowledgeable than us, we are likely to revert to Child ego state without even realising it.

Organisations therefore tend to develop hierarchies of ego states, with each senior person adopting Parent and each junior person opting for Child. If we consider the way in which organisations have layers of employees, supervisors, managers, more senior managers, and top managers, we can envisage a series of Parent to Child interactions stretching up the hierarchy. A middle manager may therefore be in Parent when communicating with their own subordinates, but in Child when interacting with their own boss.

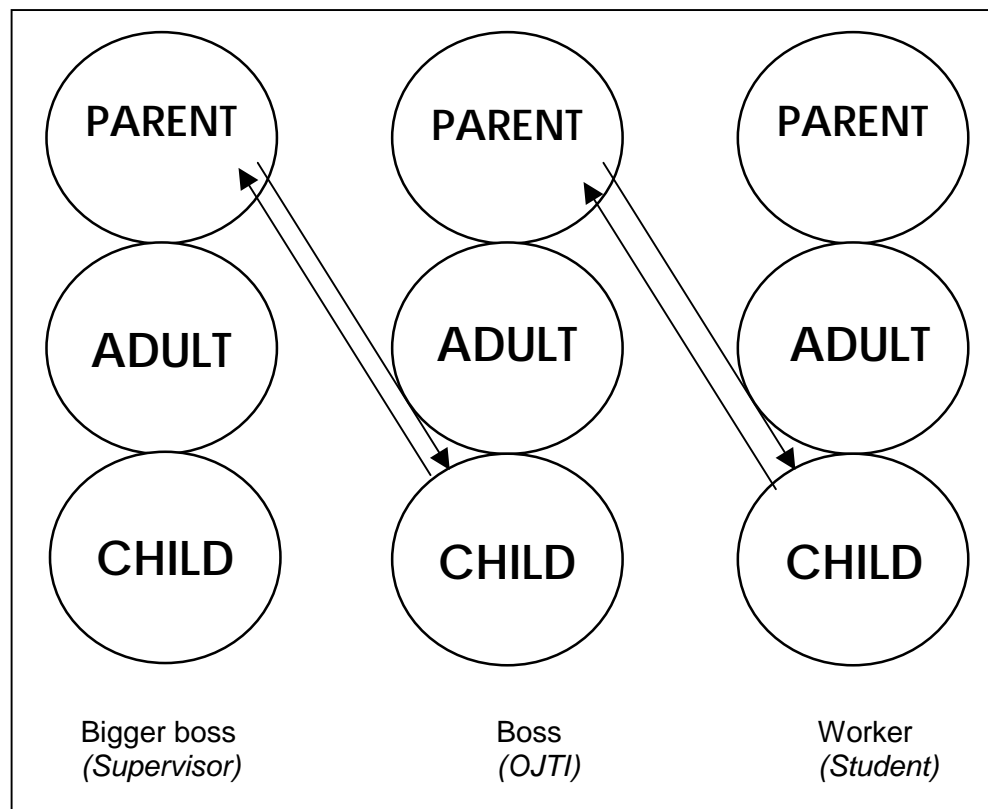


Figure 9: Hierarchy

Something very similar happens with OJTIs and students. Coming back into a learning environment triggers memories of school. For some of us, this was an enriching experience where we were encouraged and stimulated. However, for others it was an uncomfortable time when we struggled with some subjects and may even have been criticised by our teachers. Without us realising what is happening, these memories replay and we feel like a child again.

This means that our behaviour is likely to come from Child ego state. We may look nervous, or rebellious, or withdrawn - whatever strategy we tended to use most when we really were at school. Our behaviour as student is quite likely to 'hook' the OJTI into Parent ego state, so that they start to respond just as our teachers used to. And so we have closed loop of Child to Parent.

To make matters worse, it is often Adapted Child to Controlling Parent. This means that the student expects to follow instructions and to be lectured to. They may be afraid to ask questions because they were ridiculed at school when they did so. At the same time, they will be completely unaware of behaving like a child.

Sometimes this dynamic begins with the OJTI instead. In these cases, the OJTI uses their own former teachers or OJTIs as role models.

They therefore adopt the same kind of parental behaviour that was shown to them when they were students. Most students will then respond from Child ego state. Often, the most parental OJTIs are the ones who complain most about their students behaving childishly!

Another variation on the Parent to Child theme is for the OJTI to adopt Nurturing Parent. While this may be appropriate at times to encourage and reassure, if it is overdone the OJTI becomes too protective. They may then insist on helping the student too much, or place so much emphasis on possible mistakes that the student becomes afraid to act.

BODY LANGUAGE AND PERSONAL STYLES

Our personal styles, or ego states, often show up most in our body language and other non-verbal signals. Indeed, it is estimated that the words we use count for only a small proportion of the messages that we transmit to others.

The tone of voice we use can be fairly easily associated with our ego state. Nurturing Parent will speak in a caring, concerned way. Controlling Parent will sound firm, or maybe very critical. Functional Adult will sound fairly neutral but interested and responsive. Adapted Child may be very polite, or timid, or sulky, or rebellious. Natural Child is likely to sound friendly, excited or curious.

Our movements and gestures also provide ego state clues. Nurturing Parent may give encouraging nods, or pat someone on the arm or shoulder. Controlling Parent may point accusingly, or cross their arms across their chest, or tap with a finger on the table as they make a point. Functional Adult can often be distinguished by the lack of distracting movements or gestures. Adapted Child is often accompanied by a lot of fidgeting, as if the person cannot get comfortable. Natural Child will also involve movement but this is likely to look more like excitement or enthusiasm.

The position of our bodies can convey powerful ego state signals. Standing so that over people have to look up at us is likely to transmit Parent ego state even when we have no intention of doing so. This is why taller people are often responded to as if they are in charge, and why short people sometimes over-compensate by becoming extra-parental when they feel they have been overlooked.

Where and how we stand will differentiate between Nurturing and Controlling. If we are in Nurturing Parent, we are more likely to stand alongside but slightly angled towards the other person. We may also stoop slightly so that we are leaning over them. In Controlling Parent, we may face them directly; the closer we stand the more confrontational we will appear.

Sitting so that people look down at us will often signal that we are in Child ego state. Adapted Child may be associated with sitting in a very proper manner, or with slumping if we are bored. Natural Child is more likely to curl up, perhaps even raising our feet to the chair if we get really engrossed. Sitting while others stand, or using a lower chair, may inadvertently convey an invitation to others to act like a parent towards us. If we sit at a terminal while a student stands over us, we may generate stress in the student, who will be struggling with conflicting responses. Their mind will tell them we are the OJTI and therefore Parent, while their body will signal that we are Child.

The most appropriate body position for Adult is to be level with the other person. This might be facing them, when we can have level eye contact. It might be alongside them, when we can both look at the same document or

screen. It may be standing or sitting, providing both of us are doing so. Sitting is often a useful technique if we are taller or shorter than they are.

Finally, muscle tone is part of the overall picture. Parent ego state tends to have a somewhat controlled muscle tone, as if we are conscious of being a big person and mindful of our physical impact on others. It may of course also come over as physically threatening. In Adult, we will appear relaxed yet alert. We will seem to be comfortable within our body. In Child we will give an impression of being ready to move at a moment's notice. We may seem like a coiled spring, or a lively child who wants to be active instead of sitting still.

CONFLICT RESOLUTION

Conflict may arise because of differences in opinions, clashes between objectives, or simply from miscommunication. Opinions and objectives need discussion if they are to be reconciled, which again leads us to communication skill as a key factor in resolving conflict.

Channels of Communication

We have already seen how the channels we select for our communication can effect the result. If our personal styles, or ego states, are not compatible, we may fail to connect. If we signal one ego state with our body language but another with our words, we will be incongruent and cause confusion.

The four main channels for successful communication - Controlling Parent to Adapted Child, Nurturing Parent to Natural Child, Functional Adult to Functional Adult and Natural Child to Natural Child, will minimise the amount of conflict generated. They are also useful as antidotes to conflict, as in the following examples:

- Controlling Parent to Adapted Child can be applied as a firm way of stopping an argument, e.g. 'We will solve this issue best by avoiding personal criticisms!'
- Nurturing Parent to Natural Child provides reassurance, e.g. 'I am sure we will be able to find a solution that meets your needs.'
- Functional Adult to Functional Adult engages both parties in joint problem-solving, e.g. 'Let's consider what options we have available to us.'
- Natural Child to Natural Child invites a more genuine closeness and connection, e.g. 'I'm worried about this too. Let's make sure we stay friends while we sort it out.'

Understanding Conflict

We can use the Personal Styles concept to give us a model for understanding conflict. From this, we can identify alternative ways of preventing it or dealing with it once it has arisen.

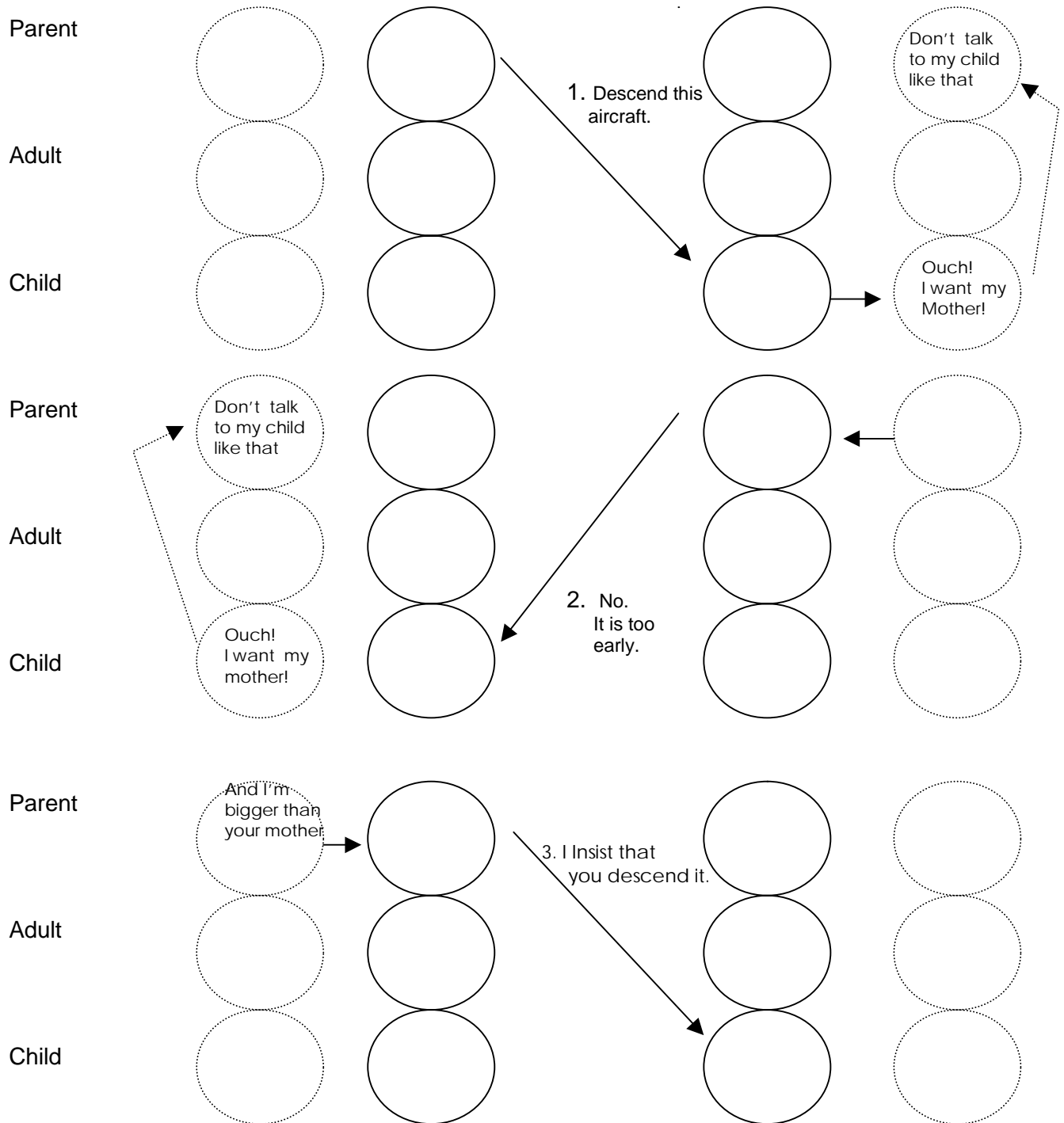


Figure 10: The Stages of Conflict

So, often what leads to conflict is an inadvertent replay of Inner Parent or Child. Either the student feels as if they are back at school or the OJTI starts the process by treating the student as if they are a child. The student may then respond with a replay from their Inner Child memory bank - and becomes difficult and rebellious. At this, the OJTI searches their own Inner Parent for a copy of an even more authoritative teacher - and talks down to the student even more. So the student gets more rebellious, the OJTI gets more controlling and little learning takes place.

Alternatively, the student may do what most small children do when they feel threatened - they fetch a trusted grown-up such as mother. They cannot fetch a real mother, but then they don't need to because they have an excellent copy filed in their Inner Parent memory. So the student now speaks to the OJTI in the way that mother might have done in support of her offspring.

At this point, the OJTI feels threatened. So they too fetch a grown-up from their Inner Parent files - and before long the 'mothers' of the OJTI and the student are in conflict. They may even bring in the grandparents if the mothers are not powerful enough!

Handling Conflict

The best way of handling conflicts like this is to avoid them in the first place. An awareness that students are likely to feel stressed, and may well revert to childhood memories, should alert the OJTI to provide extra reassurance and encouragement. Respecting the previous expertise of the student is also helpful, as it reminds them that they have useful past experience of learning how to do things. Finally, inviting them to play a part in designing their own learning programme will stimulate their Adult reasoning ability.

If a conflict arises, then the extended internal/behavioural model shows what is needed.

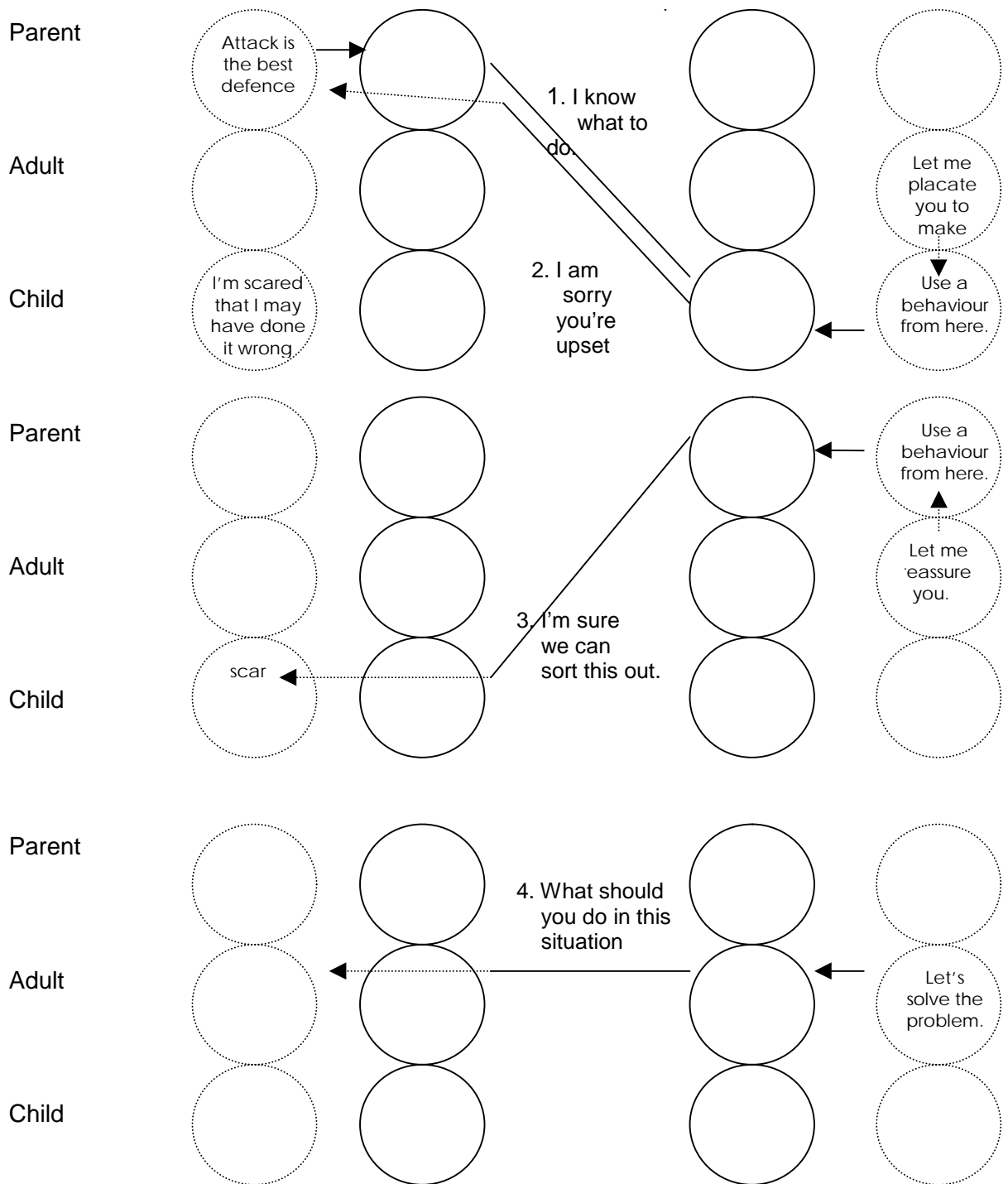


Figure 11: Conflict Handling Sequence

We have a scared Inner Child and an angry Inner Parent to deal with. We want to connect with an Inner Adult so that the student will return to functioning in the here-and-now.

Our sequence of behaviours is therefore:

1. **Adapted Child** - to respond apologetically to their Controlling Parent, and thus to the Inner Parent figure that has been stimulated.
2. **Nurturing Parent** - to reassure their Inner Child and invite their Natural Child to reappear with its curiosity and desire to learn.
3. **Functional Adult** - to invite their Inner Adult to take charge again, and their Functional Adult to join the OJTI in problem-solving.

It may be necessary to repeat the sequence if the student is very stressed. This is because we often fail to pick up unexpected signals when we are upset.

Note that the sequence needs to be just that - a sequence of one behaviour after the other, without pauses in between. It does not have the same effect if the OJTI splits them into three separate interactions.

THINKING SKILLS

Discounting

Discounting, when applied to our thinking abilities, is the process whereby we overlook or minimise some aspect of ourselves, others or the situation. The discounting process occurs outside our awareness but can often be recognised by other people through what we say and do.

It is as if we have certain closed loops, or gaps, in our mental images. These lead us to see, hear or feel what we expect to see, hear or feel. Shown common phrases with typing errors, we may automatically 'read' the correct version. This is why it is so hard to proofread our own work. When shown a picture that has been deliberately drawn to provide more than one perspective, we settle for our first interpretation unless we are prompted - and sometimes even then we can't see the other version.

The same process occurs when we talk to other people. We hear what they are saying and make assumptions about what else is stored within their minds. The concept of spider maps helps us understand this. People will have their own, idiosyncratic map of a topic. Some peoples' maps will contain more information than others will. There will also be variations in the ways that connections are made within the maps.

Your map of school, for example, may be divided into subjects, teachers, sports, friends, hobbies, homework, and exams. Rather like a real spider, you are unlikely to manage more than eight legs. Each of these legs will then be further subdivided. Another person may have similar main categories but then go on to subdivide in different ways. They may also have very different experiences and emotions associated with the various elements within their map. Someone who enjoyed school will call to mind a very different 'spider' to someone who hated it. And someone who had only private tuition will find it hard to comprehend what a mental map of school might contain.

Coaching with Spiders

We can use this idea of spider maps to help us be better trainers and OJTIs. The student will probably have a far less extensive or well-structured map than we have for the area we are teaching. If we ask them questions, we can find out what they know already. We can also check it for accuracy, and for whether they have the most efficient structure to it.

We can then provide them with a new structure if necessary. We can also guide them on how to build up a more detailed map, and give them practice at accessing it as part of the learning process. We can make a point of emphasising any aspects that are likely to conflict with what they already know, so that they update their maps. Finally, we can question them again to make sure that they now have the best possible map filed away.

Levels of Discounting

Another way in which a knowledge of spider maps and the discounting process can help us be better OJTIs is to check how the student may be unwittingly sabotaging themselves. There are four levels at which people frequently discount:

The situation - We may overlook some aspect of the situation. Perhaps we are overloaded so we can't process all the stimuli that are coming in. Whilst we pay attention to one thing, we overlook another. Or maybe we filter out something because we are not used to paying attention to it. Situation discounting is like the way we can tune out the background conversation to stop it interfering with our concentration.

The problem is that sometimes we tune out too much. Our students may miss things because the situation is so new to them. We may fail to point things out because we are so used to them that we respond automatically.

The significance - We may be picking up the signals but not recognise the significance of them. If the stimulus is not connected in our mind map with something that provides meaning, we may not realise we need to take action.

A student may note an event but not realise it means something. Or they may make a mistake because they have no mental image yet that would alert them to the consequences of their action. An OJTI may identify that the student is making mistakes but fail to notice the significance of several errors arising from the same misunderstanding. The OJTI may also discount the significance of non-verbal signs of anxiety or overconfidence.

The solutions - sometimes we recognise something is significant, and that it represents a problem, but believe there is no solution. This is not discounting if we genuinely lack the relevant knowledge of the subject, and provided that we do believe there could be a solution that we don't yet know of. It is discounting when we tell ourselves that problems are insurmountable.

Students may discount around solutions when they find it hard to learn from the OJTI. For example, they may realise that they are not learning because the OJTI is not a good teacher, yet believe there is nothing that could be done about that - instead of talking to the OJTI and maybe asking for help to be provided in a different format.

An OJTI may do the same sort of discounting when they decide that their teaching is not working but make no attempt to find out about alternative methods. Human beings have the strange habit of repeating behaviour that has already proven to be ineffective, as if it will somehow work if we do it harder.

The skills - we may know that solutions exist but believe that we, or others lack the necessary skills to implement these options. This is a fairly common form of discounting in learning situations.

Students may lack confidence in themselves even though they may have gone through a careful selection process. They may well talk about how they despair of ever getting it right. They may also behave in a confident manner but secretly doubt their own abilities. This doubt will interfere with their concentration and application, so they make mistakes, and they see this as evidence that they were right to doubt themselves!

OJTIs may have similar doubts about their own competence as OJTIs. A more serious discount occurs when the OJTI decides that the student lacks the necessary skills. A poor OJTI will blame the student rather than recognise their own lack of training skill.

Discounting is a difficult process to stop because we don't realise when we are doing it! It is a case of 'We don't know what we don't know'. We need feedback from others, who can often spot the things we overlook. We can also look for patterns in the ways we fail - if we can identify situations in which we are the common denominator we may be able to work out how we are discounting.

Steps to Success

OJTIs need to assist students to overcome discounting. We can do this by starting at the same level as the student and 'walking' with them up the steps to success:

- Situation:** Check we are both using the same information.
- Significance:** Check we both have the same spider maps for assessing the information.
- Solutions:** Explore the various alternatives available.
- Skills:** Demonstrate, explain, guide and never forget that the point of coaching is to build new skills in the student.

STROKING

Units of Recognition

Stroking is jargon for giving some form of human recognition to another person. A stroke is a unit of recognition, which can be anything from a glance to a hug, with conversation coming somewhere between these two extremes.

All humans have a biological need for strokes. Without human recognition. We are like the orphans in Romania - we fail to develop properly. Solitary confinement is kept as a severe punishment as well as a method of brainwashing, because we know that few people can stand such total lack of contact for long.

Although the first strokes we receive as a baby are physical, by the time we are grown-ups we have learned to accept our strokes verbally and visually as well. At work touch strokes tend to be confined to handshakes or greeting kisses. Instead we concentrate on non-physical strokes. We see smiles and frowns; we hear praise and criticism; someone asks after our family or chats about hobbies.

There are also cultural differences in the kinds of strokes that are acceptable. It is sometimes joked that the further south you go in Europe, the warmer the strokes get. It is certainly true that there are some national variations, although it is also true that all human beings need strokes to maintain their sense of self.

Strokes have different levels of intensity. A ritual greeting is low on the scale whereas a compliment (or complaint) about our performance will be much more intense. The status of the giver may be more or less significant to us than the same comment from the managing director.

Positives and Negatives

Strokes are also positive or negative. A positive stroke is one that is life enhancing, that invites us to feel that we and others are OK. A negative stroke invites a person to feel that they or others are not OK in some way - that encourages a view of the world that incorporates winning and losing rather than win-win. Note that constructive criticism is a positive stroke because it signals that we can learn and improve our performance.

Destructive criticism, which attacks us as a person rather than suggesting possible behaviour changes, is a negative stroke.

All of us learn when we are young that negative strokes are better than nothing. We also learn how to stimulate others to give us negative strokes. Imagine a small child playing happily with some toys; few parents would interrupt to stroke the child positively at this point. Instead, they are likely to take the chance to have a short rest from their childcare duties.

On the other hand, let the same child do something naughty and the parent is likely to react instantly with a negative stroke.

Children are natural scientists, constantly testing out hypotheses about how the world operates. They experience these two reactions and come to a conclusion which is usually that you can't always stimulate positive attention when you want it but you can generally provoke negative strokes at any time. This theory will usually be confirmed at school, where teachers tend to pay most attention to the children who misbehave. Managers within organisations follow similar habits, often spending far more time with poor performers than they do with other employees.

There is a more serious drawback to negative strokes than the unpleasant atmosphere they create. Negative strokes reinforce the very behaviour that they are intended to stop, especially if the recipient is short of positive strokes. This is because strokes are biologically necessary so any stroke is better than none. People will therefore continue to act in ways that stimulate negatives if that is all they can get.

Stroking Patterns

We all establish stroking patterns. These are the characteristic ways in which we give and receive strokes. The major part of our pattern will involve the people we spend most time with. We may have separate patterns for work, family and friends. In each, there will be typical strokes we exchange. The content and style will vary if we are targeting our strokes to the receiver, or will be unhelpful stereotyped if we only give out the type of strokes we prefer ourselves.

These stroking patterns make a significant contribution to our 'psychological stability'. Without them, our world seems unbalanced. If we change our jobs, we often leave behind the stroking patterns established with our former colleagues. We may then feel stressed until we can create new patterns with our new colleagues. If we are learning a new job, we may be very reliant on our OJTI for strokes.

Strokes as Feedback

Good OJTIs recognise that feedback is a powerful form of stroking. They therefore make sure that they give only positive strokes, whether these consist of praise or constructive criticism. They know that negative strokes will only serve to reinforce the very behaviours that they don't want.

Wise OJTIs also realise that strokes from them will be perceived as extra powerful. This is partly because of the tendency for students to act like children and think of OJTIs as parent figures. Another factor is the dependence of the student on the opinion of the OJTI - the student may not yet understand the task well enough to judge their own performance.

In addition, the student may have changed jobs and will therefore have lost the stroking patterns associated with their former colleagues.

Effective OJTIs are also conscious that timing of strokes is important. They give:

- complimentary strokes immediately after the event,
- (constructive) critical strokes immediately before the event.

To explain this apparent paradox, they praise as soon as possible but save their criticism until the student is about to try again, and can therefore apply the feedback.

Visualise an OJTI teaching a group of young people gymnastics. As each student performs a somersault the OJTI praises a specific aspect of their performance. Each student feels pleased as they rejoin the queue for the next attempt. Then, as they about to approach bar again, the OJTI provides the constructive feedback - saying, for example, 'Now this time concentrate on keeping your hands closer together.' The student hears this as helpful advice rather than criticism, and concentrates on it as they perform. The good OJTI then immediately praises them for their attempt even they have not succeeded perfectly; then offers yet more feedback as they approach the bar again; and repeats this process until the student is sufficiently skilled.

WINDOWS ON THE WORLD

When we are small we do our best to understand how the world functions. We devise our own theories to explain what happens to us, especially about how we relate to other people. Unfortunately we lack both knowledge of the world and the thinking ability that grown-ups have. It is not so surprising then that most of us come to incorrect conclusions.

We try out several 'theories' and then settle for one of them without realising that there is actually another point of view available to us. When we are grown-ups we are likely to retain this basis view of the world, or 'life position', and to apply it again as if looking through a distorting window. We will apply it particularly when we are under stress.

I'm not OK You're OK	I'm OK You're OK
I'm not OK You're not OK	I'm OK You're not OK

Figure 12: Windows on the World

I'm OK, You're OK

The window that does not distort is the life position overlooked by us as small children. This is the healthy I'm OK, You're OK decision. In this view of the world we recognise that everyone has a right to live in the world and to seek to meet their needs. As the world has limited resources and as we each have our individual preferences, we need to respect each other and engage in joint problem-solving so that we can all get on with each other.

Instead of adopting this view of the world, when we are little we work through three other options. We generally then settle on one of these although some of us may opt for two alternatives and all of us become familiar with all three.

I'm not OK, You're OK

First we experiment with I'm not OK, You're OK. This makes a lot of sense when we are small. We see others who are bigger than us and can do things we cannot do - such as using long words and tying shoelaces - all the things we will be able to do when we are older. Unfortunately we don't always realise this will be part of the normal growing up process and we assume it must be a basic fault in us.

So we decide that other people are somehow better and more capable than we are. If they take care of us and do things to help us, they may inadvertently reinforce this belief for us.

If we keep this view as we grow up, we are likely to spend time feeling inadequate and helpless, especially under stress. We may assume we

cannot do things without even trying, and may tend to expect others to take care of problems for us. On our very bad days we may act like a victim in search of a rescuer. The overall effect will be to distance us from others because we will withdraw, believing that they are only being kind to us and do not really want our company.

I'm not OK, You're not OK

An alternative view we explore when small is that of I'm not OK. You're not OK. With this, we accept that there are many things we cannot do - and again we fail to realise we will become more competent as we get older. We also decide that other people are no better. We notice when they make mistakes, when they fail, when they are unkind to us. We then conclude that there is something wrong with everyone. This belief may well be confirmed in our minds if our parents or other grown-ups are ill or under stress, and are unable to behave towards us in a consistently reasonable and caring manner.

As grown-ups, we may revert to this life view when under stress ourselves. We then feel that no one can be trusted, including ourselves. We expect to fail and we expect that other people will not help us. We also expect other people to fail and feel there would be no point in helping them. Generally, this window on the world leaves us feeling rather hopeless. If others are nice to us, we suspect their motives, and we may get nowhere with relationships with others because we are cynical.

I'm OK, You're not OK

Finally, we consider a third option: I'm OK, You're not OK. In this position, we decide that we'll be better than everyone else. Our problems are purely temporary; as soon as we grow up a bit we'll be able to put others in their place. We reinforce this belief by being competitive. We pay attention to the times when we are best at something, whether it is winning a race, coming top of the class, or thinking that we are a better son or daughter than our siblings.

Looking through the window when we are older means that we continue to remind ourselves that other people are inadequate. We may well appear to be arrogant and hostile. We actively look for other people's failings; it is hard to find anyone else who can match our own high standards. Because of this, our relationships with others do not last - we seem to get rid of people as we get to know them better and can identify their weaknesses.

WINDOWS AND STROKES

Our window of perception on the world will determine which strokes we will accept.

In I'm OK, You're OK, we accept positive strokes and reject negatives. If we are offered destructive criticism, we may well ask the person to be more specific about how they want us to change our behaviour, so that we can get useful feedback from them.

In I'm not OK, You're OK, we are likely to give the stroke back. We look embarrassed and say something like 'It's nice of you to stay so, but I don't deserve it'. We operate on the assumption that they are only being kind to us. Unfortunately, this tends to confirm our view of personal inadequacy because they then withhold further strokes for fear of embarrassing us again.

If we are criticised whilst at this window, we are hurt. We 'know' we deserve the criticism but are upset that such a nice person has found us lacking. We probably decide that we have let them down and should be ashamed of ourselves.

In I'm not OK, You're not OK, we are likely to respond in a cynical way. We assume that the stroke is not deserved, and that they are only giving it in order to lull us into a false sense of security. They in turn decide that we are so suspicious that they will not bother being nice to us again.

On the other hand, if they offer a negative stroke, we accept this as evidence that no one is OK. We expect people to be negative; we usually grumble a lot and complain that we can't be expected to perform when others make life so difficult.

A person looking through the I'm OK, You're not OK window will expect positive strokes. They will respond arrogantly, so that people decide not to stroke them anymore because they are so conceited already. This person then concludes that the lack of strokes is because people are too stupid to appreciate their excellent performance.

If they are given a negative stroke, they will blame others for the problem. It will be someone else's fault, not theirs. They will also give out a lot of negative strokes as they concentrate on other people's failing.

IOKYOK or SHNOK

Remember that we make decisions about our windows on the world, or life positions, when we are still small. As we grow up, we realise that I'm OK, You're OK is a more accurate reflection of reality. However, we continue to revert to one of the unhelpful life positions when things are not going well for us. Instead of IOKYOK we opt for SHNOK - Somebody here is NOT OK!

This makes the problem worse as we then distort what we perceive. It becomes a self-fulfilling prophecy because we are so intent on our life position that we discount any conflicting evidence.

In order to get on with others, we need to operate from the I'm OK, You're OK philosophy. We will then be better able to distinguish the person from the behaviour. We will recognise that everyone has bad days sometimes, so we will not respond too much to actions that are clearly the result of stress in the other person. Instead we will behave tolerantly and patiently, avoiding the invitation to start looking through our own distorting window. We will persevere with a problem-solving approach, even if it means coming back another time when the other person is more likely to be operating under the I'm OK, You're OK stance.

BAR's TO SUCCESS

How we Stop Ourselves Succeeding

We often sabotage our own performance, our attempts at learning, or our relationships with others, through the process of self-fulfilling prophecy. We do this by creating a circular BAR (Beliefs, Actions, Reinforcement).

Our beliefs about ourselves, others of the situation influence our actions. These actions then trigger responses that serve to reinforce our original beliefs. We may have many of these circular BARs in our heads. They act just like prison bars, keeping us constrained within boundaries we have created for ourselves.

To take a common example, someone who believes himself to be shy and socially inept goes to a party. Because he is so busy thinking about how shy he is, he makes no attempt to talk to other people. Indeed, he probably avoids eye contact and may even seek out some task that will allow him to avoid contact. The result is that no-one bothers to talk to him - he sees this as evidence of his own lack of social skills.

We can use this notion of BARs to link some of the other concepts and frameworks, and to better understand the coaching process.

Beliefs

These consist of our core beliefs, or windows on the world, and our operational beliefs, as contained in our spider maps.

If I believe I am not OK but others are, I will expect to fail although my OJTI is very helpful. It will be my fault that I fail to learn in spite of their good teaching.

Within my mental map, I will probably have some associated but more specific beliefs, maybe based on the stated opinions of my teachers about my failings at school. I may even know how I am going to fail to learn, such as through failing to ask enough questions, or getting confused easily.

These unhelpful beliefs will come from my Inner Child, probably reinforced by messages stored in my Inner Parent. My Inner Adult will be out of commission. I will be discounting any possibility that this time might be different, that I am now a grown-up, that my OJTI is not my old teacher.

Actions

My actions will now be influenced by my beliefs. They will affect me in three ways: through my observable behaviour, through how I feel, and via my fantasy of what will happen.

My observable behaviour will show via my selection of personal style, or ego state. I may well exhibit an inept version of Adapted Child, or perhaps a rebellious or sulky variation of this style.

Inside, I will probably feel just as I used to at school. I will have reverted to an earlier 'tree ring' and feel like a child again. I may have stomach ache, or a migraine, or some other psychosomatic symptom.

Finally, I will be fantasising about the situation. I will be imagining that it is the same as I knew in the past, if not worse. I may even project my old teacher's characteristics onto my current OJTI, and expect to be treated in exactly the same way.

Reinforcement

The reinforcement of my beliefs will come in three ways: through the reactions of others, through an evolution of my fantasy, and through the recollection of memories of similar events.

My selection of ego state will have influenced the way my OJTI responds to me. If I persist in behaving like confused child, the OJTI is likely to shift into Controlling or Nurturing Parent. This will 'prove' to me that I am indeed an incompetent who has to be looked after or someone who gets bullied.

As I evaluate my fantasy, I am likely to conclude that this situation is turning out just as badly as I had feared. I may even decide that it is even worse than I imagined. This will reinforce the mental map that I apply to situations like this, so I will be even more worried next time.

Finally, I will dredge up memories of other times when things have gone this badly. I may recall them in great detail, getting more depressed as I do so. This will also reinforce my mental map, as well as carving a deeper groove through my 'tree rings' to the unpleasant parts of my past.

All of this will 'prove' to me that I am right to be so concerned about my lack of learning ability. My OJTI is now likely to agree with me!

BARs to Coaching

A simpler example will show how the BAR held by an OJTI may interfere.

If the OJTI has an I'm OK, You're not OK perception, they may believe that students are generally not very intelligent.

They may then behave in an impatient and derogatory manner, such as through negative Controlling Parent or cold Functional Adult. They may feel a muscle tightening associated with frustration, and fantasise that this student will be no better than previous ones.

A possible result will be that the student gets nervous at the lack of reassurance and encouragement, doesn't ask enough questions, and makes mistakes. The OJTI then remembers how this has happened before, and confirms that the fantasy has come true.

An alternative result may be that the student gets annoyed with the OJTI and complains about their poor instructional skills. At this point, the OJTI simply switches to an alternative set of beliefs, such as deciding that the student is unstable or over-confident.

Overcoming BARs

We have three options for breaking the BAR cycle, whether for ourselves or to help students:

We can change beliefs:

- *through examining the current relevance of our beliefs;*
- *through discussing them with other people;*
- *through checking the evidence more carefully;*
- *through asking people why they respond to us as they do;*
- *through setting out deliberately to respect and understand the beliefs of others.*

We can change our actions:

- *by watching and copying other people;*
- *by learning new techniques and approaches;*
- *by planning ahead;*
- *by rehearsing beforehand;*
- *by role-playing with friends;*
- *by practising in places where we can experiment safely.*

We can change our reinforcement:

- *through checking our assumptions when people respond to us;*
- *through building a support network of people who will treat us with respect;*
- *through learning to separate fact from fantasy;*
- *through focusing on our successes rather than our failures;*
- *through recognising that other peoples' responses arise from their own beliefs;*
- *through setting realistic targets for ourselves.*

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PREPARATION AND BRIEFING TECHNIQUES

This section of the documentation and the associated practical exercises is designed in order that the reader shall:

- **be aware of the value of presenting yourself, the norms of conduct and professional standards to be achieved;**
- **recognise the necessity of personal preparation for training;**
- **effectively brief the student before commencing training at an OJT position.**

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INTRODUCTION

The aim of this section is to guide you through the process of your own groundwork for coaching and the simple but essential technique of preparing the student for his day-to-day training. We would like to use two expressions in the text of this section, that of 'pre-briefing' and 'briefing'. These two words may seem similar to the reader, but each technique has a distinct purpose and is addressed to different people in the training loop.

The pre-briefing covers the preparation necessary for the trainer in to have the greatest chance of success and will include a pledge towards commitment to coaching. The briefing, on the other hand, provides the student with his work requirement scenario and is considered vital to the conduct of any training session. This point is certainly strongly sanctioned in the EATMP report that forms an addition to this documentation.

Pre-briefing is what I do for me.

Briefing is what I do for you.

Many trainers have hitherto overlooked these significant steps, thinking them to be unimportant or too time consuming. Maybe the time has come to reassess some of our beliefs and to start taking a more structured approach to our training methods. A good briefing will reward you and your student with more positive results, it will assist the student in avoiding unnecessary errors and need not take up too much of your time if carry it out using our seven part sequence.

Much of the trainer's attention is focused on the technical aspects of the student's development, that is his air traffic control practices, his judgements and his ability to attain professional standards of proficiency. We should not lose sight of the fact that the content of on-the-job training often extends well beyond what is formally taught and these aspects of training are vital even though they may not appear in any training scheme. It is training in how to become an effective member of an integrated team. Perhaps that is a good starting point.

NORMS AND HABITS, TEACHING AND LEARNING

The air traffic controller is actively involved in the team to which he belongs and his identity as a controller is similarly closely connected to his *place* of work. There is no doubt that each unit displays a specific profile or unique culture and that team cohesion is considered crucial.

To this end there are certain rituals and practices that take place with the purpose of binding the controllers of a particular team and developing a feeling of solidarity amongst its members.

However, much of what is learned during on-the-job training is never formally taught, there are no explicit objectives for these areas of development. Much of the student's learning depends on observations and the supervision he receives and this learning is based upon knowledge that is implicit and shared *during* training. It relates to the domain of habits and will involve areas such as:

- professional norms of conduct and the social workings within the team;
- the attitudes and professional standards that must be met in order to gain the acceptance, respect and trust of the team;
- the operating norms of the group, local practices that are sanctioned and followed by members of the same team. It is the acceptable face of bending the rules.

Many, if not most new students suffer to some extent from what can only be described as self-orientation, they are preoccupied with 'What is happening to *me*, today?' This is normal behaviour when one considers the student's position and the stresses of constantly being the subject of scrutiny. Part of the training process should involve a broadening of the student's outlook to encompass the interdependency of team membership. They need to be given guidance in recognising the need for compromise and co-operation in the domain of team habits. This is also covered in the section 'The Learner'.

THE PSYCHOLOGICAL CONTRACT

On-the-job training calls for a close and sustained relationship between the OJTI and the student, a relationship that places great demands upon both of you and it is the quality of this trainer/student relationship that determines, to a large extent, the overall success of the student. Certainly we can say that the responsibility for establishing a positive relationship lies with the OJTI and that thereafter each must accept mutual responsibility for its maintenance.

Through experiments carried out in various spheres of industrial and educational psychology, it has been possible to develop certain techniques that, in themselves, will facilitate the establishment of positive relationships.

Borrowed from the school of behavioural psychology, the '*psychological contract*' will prove extremely useful in coaching techniques.

Essentially the technique involves a discussion between the OJTI and the student so that they may both explain their expectations and agree on them from the outset. It is effective for two reasons:

- It ensures the establishment of a dialogue and this in turn will decrease the possibility of personal conflict;
- It enables the persons involved to know, in advance and in concrete terms, what they should or should not do from the start and for the duration of the contract in some cases.

Many conflicts between people arise as a result of one of the parties being uncertain of the expectations of the other and we may conclude that if uncertainties can be eliminated, then both parties may concentrate on what they are supposed to do. The process should be carried out informally and over a period of several days. Remember, *it takes six times to turn a bad impression into a good one.*

THE TECHNIQUE OF THE PSYCHOLOGICAL CONTRACT

- **Explain the nature of the contract** and describe what a beneficial effect it will have on the working relationship.
- **Establish contact with and become better acquainted with the student.** Find out about his past experiences, his likes and dislikes and thereby his perceived strengths and weaknesses. Do they correspond to those you are aware of? Ascertain what style of coaching he best responds to and with which he is most at ease. Are you able to accommodate his needs in this respect?
- **It is equally important for the student to become well acquainted with you,** his OJTI. Use this opportunity to make the student aware of your main personality traits, your style of controlling and your expectations about his pace of learning, attitudes and behaviour.
- **Explain the aims or goals and parameters.** Discuss all aspects of the training process, the objectives, the way in which you intend to proceed. Explain the note taking, intervention and feedback procedure.
- In order to make it easier for the student to adapt to his new environment, **describe the professional ethos and norms of conduct.** Make it known to him what earns the trust and respect of colleagues, what attitudes he is expected to hold and support. Outline the various activities where the controller can act individually and autonomously and those in which consultation and co-operation with colleagues is required.

Once each side has described his expectations, there is a commitment to respecting those of the other party. Additionally, should certain undesirable traits develop in future, reference to these conversations and this contract or agreement may be helpful as a reminder to your student.

PREPARATION TIME - PRE-BRIEFING

'Failure to prepare is to prepare for failure' goes the old axiom in training. There is a formidable amount of truth in some of these sayings. Many OJTIs are uncertain of what needs to be done, they are rather opportunistic in their methods of coaching and sadly some have weaknesses in their knowledge of procedures and letters of agreement, etc. Being an OJTI does not, of course, imply that you have to be perfect, but students will give more respect to the trainer who has evidently taken the time to do his homework, one who is prepared to give much needed guidance from the outset.

The following five-point preparation should help you to proceed with direction and will enhance your effectiveness as a professional trainer:

- **Ascertain what has to be done.** Be clear in your mind of the objectives and priorities for this student and this phase of his training. If necessary, discuss this point with your training manager.
- **Establish the identity and background of the student..** You know for yourself that to be anticipated, to be received by someone who knows who you are and to be greeted by name helps to eradicate some of the uncertainties we all experience when put into new surroundings.
- **Read the student's previous training reports.** This may seem to be a rather contentious point for many readers. Often people will argue that to have such knowledge is a hindrance to objectivity, that prejudgements will be formed. Certainly there remains a risk, but the danger of not going through this procedure is greater. To be aware of the student's relative strengths and shortcomings will help you to develop the strengths and work on overcoming the weaknesses from the very first minutes of training. Without this information, much training time will spent coming to conclusions that already exist.
- **Prepare to explain and overcome reported weaknesses.** Much of this statement has been explained in the previous paragraph, however, demonstrations and explanations require planning and prioritising if they are to have any significant effect.
- Finally, **be committed to fulfilling your role as an OJTI.** Ensure you are not suffering from training fatigue, a significant possibility if you have been training consistently over a long period of time. Show your commitment by refreshing yourself on procedures and letters of agreement. Have it as your objective to develop this student to be a successful and integrated member of the team. Orientate yourself towards a successful outcome.

BRIEFING YOUR STUDENT

As has been previously mentioned in this section, many tears and frustrations can be avoided by the simple process of preparing the student, by providing him with a work requirement scenario. Often students are uncertain of where they should be focusing their effort, of what expectations the OJTI has, of what operational constraints under which he will be working.

The briefing, however, is not totally for the benefit of the student, it will give the OJTI a useful focus, assist him in the process of giving constructive and timely feedback and help him to avoid being side-tracked by inconsequential occurrences.

By adopting the following seven-point structure, you will give the student a valuable and efficient backdrop against which he will be able to work and learn more effectively.

- **Start by putting the student at ease.** Most if not all students suffer to some extent from an element of apprehension when going into any practical training where his work practices are going to be scrutinised not only by the OJTI but by other team members. The object of the scrutiny will be different, but the student is always aware that his actions are being closely observed. The depth of trepidation will depend on the student's relative successes in previous training sessions, the quality of the trainer/student relationship and the degree of trust and respect he has earned from other team members. Nonetheless, a little time spent putting the student at ease will aid the student's performance, especially in the early days of training or when the student's work has not come up to his or your expectations.
- **Determine the objectives of the day with the student.** This represents another point of strong resistance among many OJTIs who would argue that, unlike simulations, the real world of ATC cannot be slowed down for the purposes of training, and neither can situations or circumstances be predicted. Whilst this sentiment is correct in essence, the student *and* the OJTI require a point of focus for the training session.

The cognitive tasks applicable to ATC represent an extremely complex process, with the vagaries of the profession far too elaborate for a student to assimilate in one go.

No, the student requires direction, he needs to be clear in what he must concentrate on. Although he will be trying to grasp everything that is happening from the beginning, he will not be able to digest it all. A simple question remains, on what elements should he and the OJTI focus upon at this particular time in his training?

We mention that the OJTI requires a focal point because he is often in danger of looking at the student's work from a global viewpoint and not

from that of a learner who is struggling and what aspects of his development could usefully be improved upon at this stage, today. Hopefully these objectives or focal points are clearly delineated by training management and they will give you a general framework within which to train, the detail will result from your observations and assessment of the student in previous training sessions. Once these aspects have been successfully mastered, you and the student can move on, gradually building the pieces into a unifying structure.

As the student's capacity increases, the area(s) of focus highlighted prior to each session should be amplified or extended, thus increasing the amount of data he can usefully process. Encourage him to achieve his potential (often different from capacity).

Think of it, if you will, as rolling out a carpet for a head of state or another important person. It is unwound, leaving a trail of carpet behind. If then, by chance it becomes untidy, we go back and smooth out the ripples. Similarly with the various skills of the student, if an undesirable trait appears or starts to develop in an aspect of the student's work that was previously satisfactory, we must add it to the current objectives and deal with the problem as a matter of importance.

There are two additional points useful for consideration. Towards the later stages of training, at a time when the student is developing an appreciation of what represents good working practices and judgement, it is a useful exercise to have the student determine his own objectives, provided of course that you can agree on his picture of himself.

The second useful item to contemplate is the use of ***a paper on which you commit the chosen focal point***. The benefit of this mechanism is that, during the briefing it *does* concentrate both of your minds on the commitment you have made, you may use this paper for making your notes during the time spent on the job, thereby keeping your own mind centred on the aim of the session and finally it may be brought out at the subsequent debriefing as the focal point of the ensuing discussion.

- **Explain to your student the standard you expect him to achieve.** We are all aware of the standards, after all they are contained in the procedures and letters of agreement. But we really should not expect the student to achieve that sort of standard immediately. We need to allow a certain degree of latitude, to give the student an envelope to work within, the lowest point of which will represent whatever minima are stipulated in the procedures of the particular unit. Over a period of time and as the student becomes more accomplished, we can then reduce the latitude we are prepared to give our student, we reduce our window of tolerance, but still complying with the laid down minima. Some standards do and can be usefully modified and this should be communicated to the student during the briefing.

Other standards we may decide we are unprepared to accept compromise on, such as phraseology, etc., the areas in particular where habits are being formed. Again the student should be made aware of this. In this way he is very clear of acceptable and unacceptable parameters.

A word of warning, when using supposedly encouraging expressions such as 'I am sure you are able to ...' or 'I know you can do it', you may be imposing unrealistic expectations on your student.

- At this stage of the briefing, **outline the conditions under which the student will be trained**. Spell out to him what coaching methods or techniques you intend to apply. If you consider that the demonstration or talk-through approach is useful, tell the student so that he knows what his role will be. Explain to him your purpose in taking notes, advise him of the fact that intervention may be necessary and that you may not have the opportunity to give reasons at the time. In short, describe *your* intentions as the OJTI. Emphasise that you view asking for help as a sign of maturity. It is useful, also, to forewarn him of those areas of work where he may act autonomously and those where consolidation is wanted.
- The fifth stage of the briefing is to ensure that the student is aware of and understands the operational constraints under which he will be working, the operational conditions. This will include all the operational matters any controller would familiarise himself with prior to taking over responsibility for an operational working position. Avoid the assumption that he knows and understands, ask questions to satisfy yourself that he truly *does* comprehend the implications of these operational constraints. Be prepared to explain how and why certain elements may affect his work and his decisions, help him to put the pieces of the puzzle together.
- By this stage you may have covered a lot of ground and a summary is useful at this point. Refocus on important items with particular reference to previous shortcomings. There are two areas to be covered aside from a synopsis of the briefing to this point. Firstly, any mistakes that the student has made before in operational procedures or practices should be emphasised and, in addition, a brief reminder of previously observed failings and advice on ways of overcoming them should be given, just like the OJTI described in the section 'Personal Interactions'.
- It is important that your student is totally clear in his own mind of the content of this discussion, perhaps quite a lot of ground has been covered. It is therefore important that you give the student the opportunity to ask questions for clarification.

So, there we are. The use of this structure will provide you with the means to cover the most essential items the student requires in terms of preparation and, once practised and a routine developed, it means that all of this information can be transferred in just a few productive minutes and *that* in itself is a significant advance.

A STRUCTURE FOR COACHING (THE DEMONSTRATION AND TALK THROUGH)

This section of the documentation and the associated practical exercises is designed in order that the reader shall:

- **become aware of the beneficial effects of the 'demonstration' and 'talk through' training methods;**
- **employ these techniques in the related practical training sessions.**

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THE PRACTICAL TRAINING SESSION

Now we have arrived at the primary feature of on the job training, the practice itself. The structure we offer here will enable you to deal with some of the problems associated with training in a simple, safe and easy to administer way.

It must be said that the process described is very open to modification depending on several factors such as the purpose or aims of a particular training session and the background of the student including known shortcomings that would profit from the usage of these methods.

We all recognise that the student's background will have a significant bearing on the approach you take but there are several points to take into account, some of which are not always readily obvious. Before looking at the techniques themselves it is useful to explore some less evident points.

When students begin OJT they may or may not have had extensive simulation time and even if they *had*, the simulations themselves may not have been 'site-specific', that is to say using the airspace, procedures, letters of agreement or traffic samples of the area on which he is now to be trained. Under these circumstances the OJTI may be wise to adopt the 'demonstration' and 'talk through' methods until such time as he is satisfied that the student can cope with the demands being placed upon him and that he, the OJTI, may assume a monitoring role.

Presupposing that the student's simulation time had met all the criteria for quality, 'site-specific' simulations, the emotional climate of having to control real aircraft cannot have been simulated, neither can the fact that real pilots do not act like simulated ones. Since *real* problems do not fall into the neat categories under which students were taught and their solutions often make some of the previous training simplistic, we may predict some sort of regression on the part of the student when starting OJT. The methods described here will provide you with the means of reassuring yourself and your student that he is in a good position to cope with the demands of controlling.

Similarly, some practices taught in simulation may not be applicable or appropriate to the environment where the student is now being trained. We lose sight of the fact that often some of what was previously learned by the student now has to be unlearned. The methods offered here will enable you to help the student resolve the confusions created by the divergence between what has been learned and real life practices.

Finally, there may come situations further down the road when a well considered application of one or other of these processes could enhance the training and help the student overcome some of his confusions. An example of this might be where the student has, over a period of time, been working with certain procedures the application of which has changed or a new one in force. Careful use of the demonstration and talk through that we go on to describe would reassure the OJTI that the student has fully

understood the application of the changed procedure, thereby reducing the prospect of unnecessary intervention.

THE DEMONSTRATION

The use of demonstration and explanation as a training method can be very effective in spite of it being a very demanding technique for the OJTI. Realistically, the circumstances under which it is applied need to be ideal if it is going to be convincing. The work situation should, out of necessity, be of low density and complexity. Having said that, however, the demonstration can bring together the theory and the practice and it can reveal important associations and relevant factors.

Be very clear in your mind what you want to achieve and therefore demonstrate. It is almost impossible to give an accomplished, well-understood explanation and demonstration on the spur of the moment, unless you are very well practised at the art. Even then it would need to be a routine subject that you were demonstrating. Demonstration therefore requires thinking it out in advance and *do* remember that showing and explaining once is little guarantee that your explanation will have been absorbed. Important items need to be shown repeatedly since the student will not see the problems as quickly or clearly as you can and too much information will not be digested at once.

Explain in a way that is easily understood by the student. By now you will have covered the section dealing with verbal communication and will understand the need to communicate in terms that your student will understand and to check his comprehension by asking him questions and allowing him the opportunity to ask questions in return. Do emphasise anything that is done for reasons of safety or that is necessary for operating within the procedures.

By asking the student questions and inviting them in return we **involve the student actively in the demonstration.** This training method should not become a passive activity on the part of the student. Under these circumstances it is so easy for the student to become distracted with his environment, especially when it is all very new, and so his involvement is crucial to his remaining focused on what is happening.

Summary

- Prepare your messages.
- Explain in language that is easily understood and be precise as you are performing the demonstration.
- Emphasise routines, procedures and safety features and point out critical aspects of the procedure before, during and after the performance.
- Similarly, emphasise cause and effect.

- Tell the 'why' as well as 'what' is being performed.
- Repeat your messages concerning complex operations.
- Involve the student through the use of probing questions.

The demonstration therefore provides the student with the relevant background knowledge and is a move towards understanding the tasks. The next step is to increase the student involvement and confirm his grasp of the situation. We need to tap into his thought processes and this is achieved by the second technique:

THE TALK THROUGH

This is the phase where you require your student to tell you exactly what to do with the aircraft under your control and when to do it. Effectively, he is making the executive decisions but *you* are the person to transmit them to the aircraft.

This is often a point of confusion because it is revolutionary to most OJTIs and it deserves a little more explanation. Ask the student to observe the air traffic situation and make executive decisions and not to concern himself with the detail such as choice of phraseology, etc. In relieving him of the detail he will see more and hopefully his decisions will be more valid. If his decision is good or sound, transmit the instruction; if not, transmit the correct instruction and then come back and discuss *his* decision.

The advantages of this procedure are:

- It taps into the student's thought processes and warns you of areas in his thinking that may be wanting.
- It confirms that the student has digested your demonstration and explanation and will give you additional feedback on his attention and absorption rates.
- Most importantly, it involves your student in the decision-making process as quickly as possible and yet does so under controlled circumstances.
- It helps to build confidence and the student knows that he is protected.

It offers you protection since it allows you to retain total control until such time as you are satisfied that you student can operate safely and reasonably efficiently.

Before finishing on this subject it is important that you make a clear distinction between the demonstration and talk-through phases by using 'key'words or phrases. When moving from the demonstration, make it perfectly clear what is expected of the student by telling him that the 'demonstration' has now finished and that you expect him to carry out the 'talk through' as explained in the briefing.

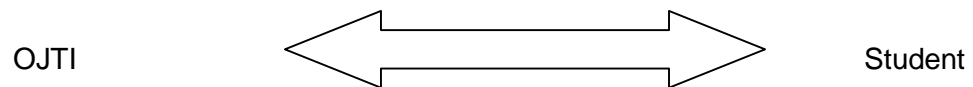
THE TRAINING SESSION STRUCTURE

- *Demonstrate and explain.*
- *The student then talks you through the job.*
- *Finally, the student carries out the tasks himself whilst you assume a monitoring role.*

TYPICAL OJTI-STUDENT INTERACTIONS

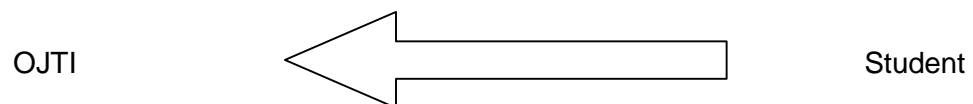
The degree of interaction that could be anticipated with each of the OJT methods may be visualised in the following manner:

Demonstration Phase



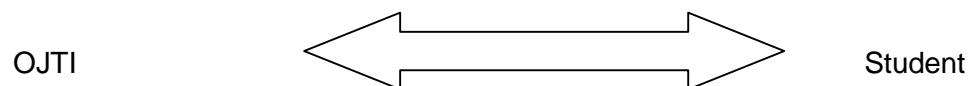
During a period of demonstration there should ideally be a continued exchange of ideas and information between the OJTI and the student.

Talk-Through Phase



At this stage the student should be making most of the input with the OJTI only having to clarify his non-acceptance of a decision given by the student. Remember, only a brief explanation is required at this point as a more detailed discussion should take place at the subsequent debriefing.

Monitoring Phase



Bear in mind not to overload the student with too much discussion or input at this stage, you'll have plenty of time to discuss training matters in the debriefing.

The final part of the coaching structure is therefore for the student to enter the application phase where you take the monitoring role, but that is the subject of the next section.

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MONITORING THE STUDENT'S THOUGHT PROCESSES AND WORKING METHODS AND PRACTICES

This section of the documentation and the associated practical exercises is designed in order that the reader shall:

- **improve the quality of his questioning technique;**
- **monitor the student's thought processes and working practices with a view to giving objective and accurate feedback;**
- **use more appropriate and timely techniques to influence those practices either directly or indirectly.**

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INTRODUCTION

The central feature of OJT is the training and practice itself. The element of monitoring the student's visible and non-visible tasks is vital and every positive asset must be brought into play. At the same time you need to shape the behaviour of your student and eradicate any negative aspects of his work that might reveal themselves.

In honesty, OJT has serious limitations and many aspects of Air Traffic Control should and could have been trained using other methods. It is in on the job training that the role and influence of the trainer can be most critical. If the student makes certain mistakes, the OJTI often has to intervene and correct matters by taking control from him without warning. ***The interests of safety and efficiency must prevail over the student's ability to learn from mistakes.*** In practice each decision has to be safe, effective and acceptable, the time to think through alternatives is often limited and wavering over decisions is obstructive. Often the student learns simply that the situation required outside intervention because it was intrinsically unsafe. What he is often denied, however, is the facility to learn all the consequences of the mistake and it is for this reason we suggest the debriefing period has such an important role to play.

Before starting, look first of all to yourself. Are you really playing the part of an OJTI? Are you being constructive and are you aware that you are in a position of power? Everything that you say or do will be taken on board by the student and so, do you inspire confidence? Remember too that you have to be ahead of the situation, your own quick reactions to situations will provide you with substantial credibility since your student will be looking to you as a specialist carrying an immense store of skills' data. You are a role model for your student.

REINFORCEMENT

At this point let us be clear on the point of reward or positive reinforcement. Frequent reinforcement works best when students are first developing new skills. Generally, the greater the frequency, the faster the learning. A word of warning however, rewards given too freely lose their value.

Recognise also that when students are developing, reinforcement and punishment are information. They tell your student exactly what you like or dislike, and the informational content becomes more important than the reinforcement or punishment itself.

Once skills have been well developed, you will only need to reinforce them occasionally. Don't, however, make the mistake of taking your student's positive behaviours for granted, forgetting totally to reinforce them for their achievements. When students have made repeated mistakes or had an all round miserable training session, praising them for some insignificant behaviour makes them feel subtly manipulated. When they perform badly,

communicate empathy but not sympathy, they will appreciate your understanding.

Concentrate upon probing questions, you need to know if the student really does understand and is developing reasoning based on real professional abilities. Making assumptions means that training time may be lost and that there may be confusion or damage if you do not proceed in the correct way. Now is the time to review the role of questions in coaching.

QUESTIONING TECHNIQUES

Your ability to be effective in questioning your student represents a most important aspect in coaching. You really do need to know whether or not the student is developing true understanding. A simple 'yes' from the student to a statement or question does not confirm that there is an understanding. Similarly a smile, an appreciative nod of the head or some other affirming non-verbal gesture does not mean that the student understands. As an OJTI we are poorly placed to determine whether or not our student really does comprehend the situation. Of course, his actions are pointers to his understanding and the student's verbalisation during the 'talk through' will help to clarify the issue for us.

The need to please and to impress on the part of the student does not make your task any easier. Questions, properly applied as a technique, can determine the understanding level of the student at the time and expose his professional analytical processes.

Children, during their development phase, are masters of the art of asking questions, after all they are trying to piece together all the segments of the jigsaw incorporating the world and its meaning. Unfortunately, questioning is an ability we appear to have lost during the process of time. It is however an asset that we can re-acquire. The process requires attention and practice on the part of the OJTI; however, once grasped it can provide rich dividends.

There are several different types of question, but, they can be categorised into two basic divisions, questions that teach and questions that test.

Questions that Teach

There is a simple rule in training and that is, never to tell your student something you believe he is capable of telling you. A teaching question encourages a process of self-learning on the part of the student, it forces him to think things out for himself. Instead of giving him the answers to his problems, encourage him to work things out for himself. Superficially this may appear a time consuming process, but the results achieved will speak for themselves. Students learn very little if they are told what they should or should not do, their solutions will have far more significance if they are the owner's of their own 'truths'. Ownership of ideas is fundamental to effective learning.

A teaching type of question will encourage the student to 'think things out for himself' and will move him along the learning curve. Furthermore, the solutions reached will remain with the student for longer.

Questions that Test

This sort of question is one used to reinforce something that has previously been taught, demonstrated and explained or discussed. In effect the student does not learn anything new but his knowledge, comprehension, ideas and professional database are reinforced or cemented because he is obliged to recall information from the past. It may be seen as an in-depth search aimed at finding out if he is able to apply this database in a positive and economic manner.

It is possible to further sub-divide each of these types of question into the 'open', 'closed' and 'probing' class of question.

Open Questions

The 'open' questions are very generalised and, as a result, have very little application within this practical training environment. They are subjective and often call for the student to voice his opinion. The student is permitted by virtue of the question phraseology to castle around within the general terms of the subject. The questioner has not provided a sharp focus. Whatever he replies to this type of question is likely to be the right answer. The student's opinions, of course, should be seen as valuable and he should be encouraged to voice them. This type of question has little exploratory importance however.

Closed Questions

These are very short questions, often offering simply a 'yes' or 'no' as a response. Their value is essentially limited for two reasons, the student could often guess at the correct response and it gives no feedback on whether or not the student was thinking along the right lines. What you should be looking for is confirmation of your student's knowledge, his appreciation of all aspects of the problem and the process whereby he reaches his conclusion. Closed questions will simply not give you any of these points. The closed question may give you the reassurance that the student will react, but it will never tell you why. This therefore leads us to the most useful type of training question, the probing question.

Probing Questions

The probing question is so called because it allows you to explore the student's analytical processes, his non-visible tasks. This type of question encourages the student to think through the problem, look at it from different angles and reach conclusions based upon a sound professional analysis. As trainers we need to be certain that our students are developing sound reasoning and this is the only type of question that allows you to look inside your student's head.

As has been suggested, children are masters in the art of questioning, they are constantly asking questions like, 'Where does the sun go at night?'; 'Why is the sky blue?' Perhaps in their innocence they have taken a lesson from Rudyard Kipling who wrote:

*'I have six honest serving men,
They taught me all I knew.
Their names are What and Why and When
and How and Where and Who.'*

Rudyard Kipling 'The Elephant Child';
1902

Many of us involved in training are often puzzled when the response to our question is unexpected. If we were to take an example from Kipling, our student's replies would cause us less surprise. Certainly start your question with a stem that sets the scene, but ensure that the question itself starts with one of these interrogative words: What?, Why?, When?, How?, Where?, or Who?. In this way you will quickly determine whether or not the student has the answer, either totally or in part.

Closed questions give results.

Probing questions search for information and give processes.

PRACTICE TIME

Now that your student has reach the stage of training where he is making and communicating executive decisions for himself, he will not be completely competent and will require your continued support, especially at the beginning. After a while you can reduce the visible support you lend, maintaining a fine balance between the right amount and the right time.

Before we look at the specifics of monitoring and intervention, it would be useful to substantiate certain ideas on this subject.

Controllers are simply satisfied if the job is done. As a trainer you need to look very carefully at how the student is developing.

A lot of bad things will go undetected by the OJTI when he joins in the thought processes of his student. An example of this could be, when an aircraft calls, the OJTI looks around, says to himself 'What's a good level?' and if the student says what the OJTI would say or does what he would do, the OJTI relaxes, not seeing some of the minor or major mistakes the student makes.

If you do use a non-standard procedure for any reason, you must reinforce the correct one in doing so. *Do* be aware, however, that you do not help students by regularly reverting to the use of non-standard procedures since

other OJTIs will disagree, creating confusion in the mind of the student and perhaps creating an environment where he wastes all his energy on pleasing the individual OJTI.

When students are low in ability, monitoring is a relatively easy task because the degree of interaction is high. Monitoring when students are high in ability is very difficult, the OJTI becomes bored, pays less attention.

MONITORING

Are you being positive? It is always easy to be critical but do remember that for personal growth people need to be told what they are doing right and failure to do so will bring about a sense of frustration in your student.

In order to assist you in extracting every possible value from each training session and to give your student a complete and balanced debriefing, view his work taking the following questioning approach:

- *What* is he doing well?
- *Why* is it working successfully for him?
- *How* is it possible to build on this success even more?
- *What* is not going so well, or *what* is going wrong?
- *How* could this have been avoided?
- *What* should be done in future to ensure this does not repeat itself?

Notes as an 'Aide-Mémoire'

Most training periods last for more than one hour and during this time many things will occur that you feel you would like to discuss or question. At the time of the occurrence this is usually inappropriate for reasons of taking the student's attention away from the task in hand, that is to say coping with the problems imposed by doing the job and moreover many other things will subsequently take place.

How then do we remember all these situations when we hand over to another controller and find ourselves in the position of offering the student the feedback he is so looking forward to? Most trainers and students, when coming out from a busy or complex training situation, will remember perhaps the last third of the occurrences of the whole period. If our memories go beyond that point, it is often the mistakes the student has made or the weaknesses observed that remain uppermost in both our minds.

A brief jotting or note made as an 'aide-mémoire' at the time or soon after will enable us to recount situations as discussion points in the subsequent debriefing. It need only be a very brief note but it will mean that valuable training information is not lost. Why not use the sheet of paper with the aims written on, the one you used in the briefing? This would keep your mind focused on the primary purpose(s) of this training session and prevent you from being so easily 'side-tracked' by other, less significant

occurrences. Your instructor or facilitator will provide you with an example of a monitoring sheet.

Many will argue that such note taking provides an additional distraction for the student. Agreed that in our professional training, note taking has hitherto often been associated with mistakes or weaknesses that would be painfully drawn out and expounded upon at the subsequent debriefing. *The time has come to shed the shackles of history.*

Explain to the student, when you describe your training methods, the reasons for taking notes and the benefits to be accrued. Disassociate the note from the student's action, wait a while before you make a note and in this way, even if he glimpses your note taking, he will not be able to associate your observation with an obvious act. Show him that actions *equal* words, bring your paper out into the open at the debriefing and use it as the basis for commenting on his *strengths* as well as his shortcomings and the subsequent discussion.

'Body Language' whilst Monitoring

Much has already been established on this subject under the section 'Personal Interactions' but perhaps little in the way of practical advice when sitting next to the student in the highly interactive and team-oriented live training environment. Here are some suggestions.

- Out of necessity it has to be stated that, to physically leave the student unsupervised is not only negligent but, in most organisations, *illegal*, whatever the intentions of the OJTI.
- Similarly many trainers consider the notion of reading a newspaper or some other material conducive to building the confidence of the student. This presumption is strongly challenged for several reasons. Amongst these we would include the fact that an OJTI who is merely glancing at a document of any kind cannot maintain 100% awareness of his student's actions and is therefore not fulfilling his obligations to the safety of the system. In addition, the student's point of view is often the antithesis of that of the OJTI; he feels blocked from asking advice; potentially he believes his OJTI lacks sufficient interest and, for someone in an insecure state or unsteady stage of training, the coach's apparent casual manner could increase his feelings of ineptitude.
- There has to be and there is a far better way of decreasing or increasing your control over the student. By moving your chair slightly away from the student, putting yourself outside of his outer vision, you will give that sense of autonomy you want your student to experience. Similarly, by moving closer to him and placing yourself *within* his peripheral vision your presence will be felt and you will be in a far better position to exercise direct control should the need arise. Be aware, however, that the closer you sit to someone who is learning to come to terms with the job and the disparities between training and real life practices, the more stress you potentially put that person under.

- Finally, please avoid sitting with that superior examiner's air we all know so well in ATC and passing those uncalled for and potentially damaging non-verbal commentaries such as head shakes or 'Tut, tut's'. Concentrate more on the ways of giving recognition and reinforcement.

Coaching a student indeed sets extra demands on the OJTI since it requires him to create a second mental model of the student's situational awareness and his actions. This second model is necessary for assessing the student's actions and to intervene or to take over should the necessity arise. The maintenance of the two mental models has, without doubt, a direct repercussion on the OJTI's workload.

When training, please take into account the following guidelines:

- Remain alert to your student's effectiveness as a team member as well as the expected ATC skills.
- Remain alert, also to his self-confidence.
- Try to remain calm regardless of what happens.
- Use your questioning techniques to help the student in finding his own answers.
- *Do bear in mind that each question you ask is a potential distraction and additional workload for the student and may therefore be self-defeating or may even lead to greater difficulties. Remember, we need to differentiate between necessary and unnecessary talk. If the student incorrectly uses a procedure or does something that impairs safety or overall efficiency, you are right to say something at the time. If, however, you wish to talk about a particular technique or method or concept, you are best to leave this until the subsequent debriefing where ideas can be discussed and expanded upon. This is Training Talk.*
- **In general people are poor at repetitive tasks such as monitoring during training; we become easily bored and distracted. Remain alert, therefore, to all of your student's actions.**
- **Similarly, avoid any tendency to follow your student's tunnel thinking process that misses keeping a broader, more complete picture. Remember, it is you who is in control and so you *must* retain the complete traffic picture *at all times* and be able to take control immediately should the need arise.**

Maintaining the situational awareness of a student is an extremely complicated and one of the most complex and poorly appreciated activities in coaching. Obviously if the OJTI fails to recognise the loss of situational awareness in their student, several safety critical problems will arise and the confidence of the OJTI and student will be severely affected. We therefore offer the following recommendations concerning the OJTI and their position when trying to retain the situational awareness of their student:

- Assess the student's learning strategies *before* going to the workstation.
- Give clear briefings of what is expected.
- Give clear briefings of hand-over procedures.
- Monitor the student's strategy.

- At appropriate intervals ask what they were thinking or how they resolved the conflicts.
- Give clear debriefings of what was achieved.
- Acknowledge differences in control strategy.
- All students will make some sort of error at times, and this will involve your abilities in error correction and intervention. That, however is the subject of this next section.

INTERVENTION OR 'WHEN THINGS GO WRONG'

Intervention is an expression we all use in ATC, but what do we mean by the term? For the purposes of this section let us consider that it could be **shaping** or even meddling in **our student's non-visual tasks** (his cognitive processes), **interfering directly with his visual tasks or finally taking the responsibility away and taking over the handling of the ATC tasks ourselves.**

In all of the other 'technical' sections we are able to offer you concrete guidelines or structures. In this particular section, however, the decisions you make are of a highly personal nature, in simple terms it is your licence or certificate and it is your decision how you protect it. Your decision will be subject to scores of influences such as your knowledge of and relationship to the student, your physical, mental and emotional wellbeing and those of the student, the abilities of the student and the workload and complexity, etc. There is, however, much general advice and guidance on offer to you in this somewhat grey area of training in ATC.

The degree of monitoring adopted by the OJTI will depend on his confidence in the student's capacity to deal with the demands of the job. Mistakes, errors or failures are fundamental in estimating the student's capacity. Too many or too few errors will lead to an under or overconfidence in the student's capabilities.

The risk allied to underconfidence in the student is that the OJTI will be excessively cautious and could intervene too soon or too often, leaving the student with little opportunity to handle dense or complex situations and thereby to acquire additional confidence himself.

The risk associated with overconfidence in the student is that the OJTI will leave the student with insufficient monitoring or none at all. Leaving the student unattended and unmonitored is, we repeat illegal and furthermore low vigilance has very serious safety repercussions since it could put both the OJTI and the student in a serious incident prone situation.

However good the preparation and briefing, your student will ultimately make mistakes of a greater or lesser importance as the training proceeds, mistakes during training are inevitable. Good coaching, however, is certainly not based upon the student making mistakes. The old maxim: let him make mistakes and he will get it right next time is not within the scheme of things for quality coaching. Mistakes will occur and need to be dealt with in a professional manner but they are not the bedrock of training. When they do happen, however, they may be used as positive training tools and you must be able to extract all of the positive aspects from the error.

Remember:

- **We do not teach by mistakes.**

- **Mistakes, however, are inevitable in learning.**
- **When they do occur, there is much to be learned from them.**

There are innumerable *reasons for intervening* in the student's thoughts or decisions and amongst those we could include:

- **When the student makes this request of his own accord.** There could be a variety of justifications in such a request, many of which are perfectly understandable and reasonable. Other reasons, such as your student's realisation that he is about to reach his limitations and that the situation is getting on top of him, should be considered laudable. *Remember, a request for help is a sign of maturity and professionalism.* At other times such a request could indicate the onset of an attitudinal problem and this, especially, will need well-considered rectification. In any case, should the student initiate a request for you to take control, you should concede to it, the reasons being explored later.
- **When there is reason to suppose that he is *about* to lose control of his situational awareness or when the situation is approaching safe limits with no apparent awareness on the part of the student.** There is very little explanation required for this statement other than to note the emphasis placed upon the words '*about to*'.

It may help you to consider that, *due to stress*, students may start to focus on particular things or areas, known as visual or cognitive narrowing, they may fail to take in the wider picture and thereby becoming unable to process all of the information needed to solve a problem. It is then that their decisions or solutions are not soundly based because they do not have all the information necessary. Having made a plan, they will often stick rigidly to it because it is comforting, even in the light of evidence that the plan is failing. Another indication that the student is becoming unduly stressed is the tendency for people to become engrossed in simple problems that they can cope with.

As an OJTI, therefore, you must be able to sense when the student is getting into difficulties and be prepared to intervene when his mental 'mist' becomes a mental 'fog'. Obviously asking the student a question or two for your personal reassurance will help you to monitor the student's situational awareness but will, at the same time, have a tendency to increase his mental workload and thereby bring nearer the onset of loss of mental control.

- **When the student encounters situations you feel he will be unable to control.** Again some difficult decisions need to be made. If the student encounters unpractised, unusual or emergency situations and he has the proven development and creativity to deal with them or if you believe these attributes exist, it would be better for him to continue whilst you monitor the situation and his decisions extremely closely. If this is what you decide upon in an emergency situation, you must pay close attention to the decisions being made, the communications taking place and the student's voice quality. Additionally, you must *monitor the status of the situation, ensuring that it does not deteriorate or that the*

student's actions do not aggravate the problem. If in any doubt, however, it is your responsibility to give the crew(s) the highest degree of professionalism and assistance under such circumstances. ***Remember, it is the safety of the system that is of paramount importance, not your personal integrity.***

- **When the student starts to become overloaded and the value of training will become very limited should you continue?** Often your student will feel the effects of the onset of 'overload' but he may very well be reluctant to come to terms with the idea and reluctant also to admit to the fact of being unable to manage. He has, of course, to face the demands of the job, including those times when 'the going gets tough', but one of the purposes of OJT is for the student to increase the amount of data he can process and this needs to be a gradual development. Remain sensitive to the student's state of awareness and be prepared to offer the 'helping hand' when you sense that he is becoming overloaded.

Offering the 'helping hand' should not be interpreted as giving one or two directives to your student since this will often increase the very thing you are attempting to reduce, mental workload. Additionally, when you begin to offer several directives to the student, he will reach a stage at which he is no longer the master of his own thoughts and decisions, they will have become yours and the student himself will be outside of the 'picture', a spectator rather than a player. Some OJTIs would, when they sense their students are becoming overloaded, take on some of the tasks for themselves. This is not a prudent decision since he, the OJTI, will potentially be absorbed in tasks other than monitoring the student, and *to take part of the task away from the student is to take away part of the picture.*

- **When you as the OJTI consider the situation is testing your own limitations.** This is a very difficult and 'bitter pill to swallow'. There may indeed be situations when the student, for reasons of past experience or current expertise, has total command of the situation but you are beginning to feel uncomfortable, tense or stressed by reason of the fact that the circumstances are encroaching on your personal limitations.

It may often be the case that, towards the end of the training time, your student's competency on a certain position may exceed that of yours. This apparent paradox may in part be explained by the fact that often your student will be concentrating his efforts on one or two sectors, e.g. Approach and Departure control, whilst you as the OJTI will have had to spread your expertise over a much wider field of control, e.g. Approach and Departure *plus* Aerodrome and ground movements control, etc.

Similarly, in the event of the student being very much more experienced than the OJTI, the OJTI may be reluctant to intervene and could be lulled into a false sense of security because he is obsessed with the belief that the student is able to cope. Under all of these circumstances you are obliged to take control away from the student in good time, the fact of working alone without the need to monitor a student should very soon give you more working capacity.

HOW BEST TO INTERVENE

There are of course scores of different circumstances and combinations of situations that render this particular section difficult to give hard and fast statements about. As was explained at the beginning of this training programme, our overall objective is to raise the consciousness of you, the reader. In the past, many of us have interfered with the student's actions or thought processes for a variety of reasons and in a diversity of ways: too early, too often, not often enough, too late, picking the student up over every trifling mistake, being too 'laissez faire' over certain aspects, intervening when he does not react as we would have done. The list is endless! We do not seek to blatantly defy your conventions, but we do, however, invite you to reconsider them.

In order to assist the student in improving his performance you need to use a combination of techniques so that errors are corrected for maximum effect. Some faults need to be corrected immediately whilst other errors should be allowed to run their course. Certain mistakes should be prevented rather than corrected and other shortcomings should possibly be overlooked for the present time. At the risk of repetition, we do not teach by mistakes but when they do occur, we should attempt to avoid reducing the student's confidence. If you endeavour to allocate the faults into one of the following *four* categories, you will extract the maximum value from them as an operating training tool, without reducing the student's performance. We *do* learn from mistakes, but only when they are used in a justifiable manner.

- **Category One, Errors that May be Prevented**

Many foreseeable mistakes are unlikely to occur when a thorough demonstration and talk through have been carried out for certain aspects, and if the briefing has been given with care and forethought. Discussion on items such as operational constraints, known shortcomings, awareness of expectations and parameters, etc., would focus the student's mind on these issues from the very outset, thereby offering him the opportunity to avoid unnecessary mistakes.

Certain unpredictable mistakes may occur where the trainer may be able to prevent an oversight or an inaccuracy from becoming a significant error. This requires a total awareness on the part of the OJTI since the student will not always mirror his expectations. One way of preventing mistakes is by the use of a 'demanding technique' whereby the OJTI asks a question that draws the student's attention to a problem. This will give the student the opportunity to see the problem and work things out for himself, by asking the question you give the student the chance to alter his decision and remain 'in the picture'.

A word of warning on this last item, the simple action of pointing may draw the student's attention to what you want him to consider, but it may not be what his mind is focused upon at the time. This will involve the student in breaking off his thought processes and trying to restart them from a new origin. This of course can be very distracting and may lead to further and unnecessary mistakes. Similarly, the use of too many questions diverts the attention of the student and increases his workload significantly.

- **Category Two, Errors that Should be Corrected Immediately**

This category is mainly concerned with bad operating habits and situations you consider as being unsafe.

A bad habit refers to poor working practices or non-standard procedures which the student may have invented or copied. They are common and often come into use by students who are low in competence and who have often copied them from qualified controllers or adopted them as a result of peer pressure.

If the student starts to slip into bad habits such as incorrect phraseology or deviation from or improper use of procedures and if such occurrences are allowed to continue, then rehearsal is taking place and he is learning a trend, which is unsatisfactory.

When a bad habit action occurs it must be corrected immediately. Failure to do so on your part will reinforce the trend because you are indirectly pronouncing to your student that what he is saying or doing is acceptable by your standards, that is you are legitimising it.

The philosophy of correcting bad operating habits *immediately* requires a cautioning remark and that is, if the student is very occupied with a complex or busy situation, correcting a bad habit at that time will be

counterproductive and the actual mistake should be corrected as soon as is reasonable.

It is obvious for all air traffic controllers that where a possible reduction in safety standards exists, some immediate action is required. One could argue that such occurrences should not take place if appropriate and timely preventative intervention has taken place on the part of the OJTI. Realistically mistakes do occur and oversights do take place for all of us, no matter how vigilant we are. ***Any mistake affecting air safety must be corrected immediately and students must be aware that you will not always be able to provide him with a suitable explanation at the time of the intervention.***

There may be times where lack of expedition is a problem. ***This too should be corrected immediately when the lack of expedition compromises the rest of the operation.***

- **Category Three, Mistakes where the Correction is Delayed**

This is the category where the outcome of an error of judgement or unsound decision will show later and where the on-going training situation is not affected. Clearly this includes situations that do not fall into the previous categories. For example, the student has made a decision that you know requires less effort and will increase his workload slightly, one perhaps where you know from experience that there is an easier resolution or he tries to be innovative when you consider a tried method is better.

Practical training is so complex that any innovation can be expected to introduce both advantages and disadvantages and our acceptance of it will and must be dependent on a favourable balance between them. It is important to give the student, as far as the integrity of the system will allow, support in using untried methods and the fact that there will be a referral to the error at the subsequent debriefing means that the instructional process is being enhanced.

- **Category Four: Shortcomings that Are Overlooked for the time being**

These are situations where, due to a lack of experience on the part of the student, the trainer does or says nothing at this, the early stage of the training.

Examples of this might be instances where the student is slow to respond to a request, chooses the incorrect telephone partner or frequently has to confirm his actions with the OJTI. It is easy for the trainer to make an issue of items covered by this category.

The OJTI must take enormous care neither to prop up his own ego by making an issue out of a mistake that occurred as a result of lack of experience on the part of the student nor to let his own professionalism force him into an early intervention.. For the most part these problems will fade in the course of time as the student becomes more familiar

with and competent at the job. If they fail to disappear, the OJTI must reassess his approach to the problem.

FOOD FOR THOUGHT

In the event of the student becoming overloaded and in risk of losing his situational awareness, you, of course, must reassume *your* control of the situation. Having said that, there is a great deal of learning on the part of the student to be gained from this state of affairs and it is very important that you seize on this opportunity to help him in reliving the trauma of the onset of 'losing the picture'.

Controllers are extremely sensitive to loss of situational awareness and it is perceived as a strong sign of personal professional failure. We have all at some stage of our careers reached the point of extreme uneasiness where we are about to or, in some cases, have actually 'lost the picture'. The portrayals given by controllers are varied in their descriptiveness and range from 'I felt extremely uneasy and apprehensive' and 'It was a period of extreme focus and concentration ... and I felt that I had no more anticipation left' to varied emotions such as feelings of emptiness and in some cases there is a physical reaction. What we *may* conclude from this is that such episodes *are* accompanied by some sort of mental and emotional trauma and are a very strong source of stress.

Part of the role of coaching is to assist our students in recognising their personal limitations and encouraging them at this point to seek help. As has been suggested earlier in this section, many students may well feel reluctant to admit that they are no longer able to cope since it could be felt as a strong loss of face, and for this reason it is a very useful exercise to discuss the overload or 'loss of picture' episode in the subsequent debriefing.

In addition to the above comments, many students will not have even recognised for themselves that they were losing their situational awareness and, if confronted with it, they will often react defensively. For many of us, verbalising our feelings is contrary to our education, culture and gender. It is therefore for the OJTI to 'coax out' of the student his thoughts, feelings and emotions at the time of the occurrence, help him to relive the situation and to recognise for himself that the onset of 'losing the picture' *is* accompanied by a reaction which could serve as a warning in future.

Remember, limits are imposed not only by the traffic complexity or density but by the person himself and it is most important that the OJTI emphasises the fact that **to seek help in good time is a sign of maturity and professionalism, and that having limitations does not mean we are unable to do the job. There is no room for 'machoism' in the operational environment.**

WHEN TO RESTART TRAINING

Depending on the nature and purpose of the intervention there will be a need for a revival time on the part of the student during which he will have to re-orientate himself and start anew his non-visual problem-solving.

Do not expect to continue training immediately following an intervention requiring you to take over directly the tasks.

Allow him time to recuperate and redesign his picture of a situation that may have radically changed as a result of your intervention.

Ensure that he is ready to take over *and* that his immediate control actions are sound by questioning him on his intentions. This would be an ideal opportunity to use the *Talk Through* technique.

FINAL POINTS FOR CONSIDERATION

Do bear in mind that a student, even after prolonged site-specific simulations, may go through an initial phase of regression, after all, real problems do not always fall into the neat categories under which they were taught in simulation.

In addition your student's decisions and reaction times will not match those of an experienced controller and this may occasionally create frustrations for you but it is totally normal and predictable. Train yourself to exercise a greater degree of patience when training.

There will be times when your student will need encouragement, he may be reticent to act for many reasons, fear of looking foolish or being wrong, etc.

Make him aware of the fact that he can look to you for help and guidance whenever he feels it is needed. Unhelpful responses block students from asking questions and generally seeking assistance when they feel in need of it.

Much of this section has laboured on errors or shortcomings in the student's technical tasks. The content of OJT often extends far beyond what is formally taught, including the expected attitudes of air traffic controllers, to the profession, to their peers and to others they come into contact with.. Many of these aspects are vital even though we seldom see them detailed in any training content. Training content should be designed to instil desirable habits but also to break undesirable ones and the training itself should aim to coerce and inspire realistic levels of confidence.

But what happens when you suspect that your student is developing signs of *overconfidence*, surely one of the most undesirable of traits in an air traffic controller under training. This is certainly an error that needs to be corrected at the onset but it is not a *reason* for intervention . It is, however, a trait that is difficult to raise and correct. The problem seems to lie in the

fact that overconfidence usually manifests itself when things are working reasonably well for the student and yet you are left with a feeling that he has little left in the way of reserve and is leaving very little margin for error and furthermore he seems unable to recognise this for himself. Please do not allow your student to get into critical situations in an attempt to cure his overconfidence. ***Remember, we do not teach by mistakes and, more importantly, training must in no way compromise air safety for this is the potential risk the OJTI runs by intentionally allowing his student to get into difficulties for the purpose of making a point.***

GIVING FEEDBACK AND STUDENT DEBRIEFING TECHNIQUES

This section of the documentation and the associated practical exercises is designed in order that the reader shall:

- **give feedback in the form of objective and accurate assessment;**
- **carry out a post session debriefing in a manner which is of benefit to the student.**

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WHAT IS FEEDBACK?

Feedback is what you do when you give your reaction to a person's behaviour, either technical or attitudinal. It is one of the processes used by the OJTI in training students and looking at what has been achieved. It is also one of the most difficult things for the OJTI to do well since it needs to be carefully considered. Similarly, the way in which you give criticism is often a running commentary on yourself. The behaviours or attitudes you criticise, for example, are likely to be reflections of yourself that you have difficulty expressing. Feedback sometimes tells the student things he would rather not hear and so these guidelines are intended to help you to give feedback more effectively.

Communicate with a Positive Approach

One of the most important skills you can learn in coaching or in any other area of your life is to communicate with a positive approach. Such an approach will help students to value themselves as individuals, and in turn this will give you a high credibility rating. A negative approach merely helps to increase the student's fear of failure, lowers his self-esteem and destroys your credibility.

In the past, OJTIs have fallen into the habit of telling students only what they have done wrong rather than what they are doing right. Breaking habits is, of course, difficult, especially the habit of telling people what they have done wrong. If you are at all uncertain whether you use a positive or negative approach, or about the degree to which you use them, get a colleague to observe you for a constructive evaluation. If you are aware of using a negative approach, you need to do three things to effect a change:

- You must want to effect the change.
- You should practice the positive approach, not only in coaching but also in all of your communications, perhaps even with your partner since often this is the most difficult transition to make.
- You need to monitor yourself and your progress, reminding yourself when the bad habit rears its head.

Another reason OJTIs adopt a negative approach is that they hold unrealistic expectations about acceptable and unacceptable behaviours. Often we forget that our students are not competent controllers. It is important that OJTIs have realistic goals not only about their technical abilities, but also about their social and emotional behaviour as well. Be realistic in your expectations and remember that people aren't perfect. After all, if students behaved and performed perfectly they wouldn't need you to coach them.

The third reason many OJTIs use the negative approach is that they seriously believe that it gets the best results. Sometimes it does work and is necessary, but when criticism is frequent or continuous, the strong emotional impact it has over students interferes with learning and has an

adverse effect on motivation and self-confidence. Often behaviours are sent underground, students start to play it safe and they take as few 'risks' as possible lest they receive disapproval from the OJTI.

Some OJTIs constantly give verdicts to their students, constantly telling them what they have done right or what they have done wrong with the latter being the more usual. It is not enough to tell students that they have done something wrong, they need specific information on how to get it right. Being judgmental is dangerous, it assumes you always know what is right or wrong. Often we find out later that in fact it was we that were wrong. One word of caution, don't evaluate the student himself, rather evaluate his behaviour or what he has done.

Some Basic Concepts about Criticism

- People grow much more as a result of being told what they are doing right. Confirmation of another's strengths goes a lot further toward building continued growth.
- A lot of 'helpful' criticism is really designed to punish, to get even or to relieve your own apprehensions.
- In general, punitive criticism is nearly always destructive and although it sometimes alters behaviour for the better or sends it underground, it does discourage seeking solutions to the problem causing the behaviour. More importantly, in an atmosphere of punitive criticism, neither creativity nor innovation can flourish. Punitive criticism, therefore, is costly, not only to the person receiving it, but to the one giving it as well.
- In order to give criticism effectively, check your current emotional state to be certain that you are giving the criticism in order to solve a problem.
- Be aware of the 'self-critic' in the student. People who have made mistakes are usually experiencing their own self-criticism. Often the student will administer to himself stronger punishment in conscious or unconscious ways than you would. Remember, the desire for perfection can be destructive. The last thing the student needs at this point is another kick. When critical of others, try to relieve the other person's inner critic and try also to deliver support along with your criticism and in that way your comments will be absorbed with a clear head. A student in the grip of a self-loathing is in no condition to learn.
- Criticism is much easier to use when the listener feels secure in his relationship with the one giving the criticism. When dealing with people who are particularly sensitive to what others think or who show self-doubt, give lots of specific and positive information about their capabilities and their relationship to you.
- Watch your language. Avoid accusatory phrases such as 'What's wrong with you is ...'. It is better to focus the action on yourself. For example, 'I

feel uncomfortable when you do this ...' In this way the person receiving the criticism will not interpret it as a personal attack.

- When criticising a work performance, focus on the *problem* and not on the person. This is known as being non-judgmental. Don't be evasive. It is perfectly appropriate to be direct. Finally, avoid implying criticism in the form of a question such as, 'Why did you do it in that way?' Most people will become defensive with this form of hidden hostility.
- Counsel your student and advise him that the proper response to criticism is, firstly to listen and then, to ask himself, 'What use can I make of this information?' It is important for him to maintain a sense that he has options, that criticism is a lesson in what to *consider* doing next time, and that some mistakes are valuable. There is an enormous amount of information that cannot be obtained in any other way than by making mistakes.
- Receiving feedback is often as difficult as it is to give it. But remember, it is from feedback that we learn how to improve ourselves and our performance. It has been said that the capacity to hear and respond to feedback is the most critical factor in becoming a trainer. Here are some guidelines in receiving feedback from another person:
 - ⇒ Avoid defensiveness and don't immediately jump to give excuses for why you did or did not do what the subject of the feedback was about.
 - ⇒ Listen carefully to the other person's description of your behaviour and their reaction to it.
 - ⇒ Consider seriously what the other person says. Try to see the situation from their point of view.
 - ⇒ Weigh up the consequences of not changing your behaviour.

GUIDELINES ON GIVING FEEDBACK

The central problem with giving feedback is that, in order for it to be helpful, it needs to be given in a considered manner. On the one hand you should avoid piling misery upon misery with negative reactions, and on the other hand avoid smothering the student with flattery or positive feedback. Feedback needs to be a well thought out balance of positive attributes and constructive criticism. The following is intended to give you guidance:

- Ask yourself why you are giving feedback. If the reason is that you are really trying to be helpful, then go ahead. If there is an element of point scoring, flattery, revenge or the like in your motive then the feedback you give will be unhelpful.
- Give the feedback as soon as possible after the behaviour on which you are commenting occurs. The longer you wait, the less helpful will be the feedback.
- Do not give feedback when the student is not ready for it. Formal coaching sessions or where the student expects feedback are the times when you can be sure that the student is likely to be receptive. At other times you need to be very much more sensitive to the student's mood.
- When giving feedback, stick to describing a specific piece of behaviour, and your reaction to it. Be precise, be factual, be authentic (open and straight) and be non-evaluative (non-judgemental). *Do not judge the person, judge the action.*
- **Focus on the causes rather than the solutions.**
- Give feedback in small amounts. Do not save it up because you will run the risk of over loading the student with your comments.
- Pay attention to your body language, tone of voice, gestures, posture and facial muscles. Maintain eye contact and be sincere. Don't use 'couldn't care less' mannerism or unprofessional and distracting gestures.

DEBRIEFING YOUR STUDENT

The debriefing sector is all-important; the training is still proceeding during this time. Students need a clear and honest appraisal of their situation and of course they require new orientation if necessary. The debriefing is a multi-storey clearinghouse which is vacated on an encouraging note and unless the debrief is dealt with correctly, most of the work already carried out during the 'live' training will be wasted. Debriefing is the point at which you review what has been achieved, you look to how far the student has moved along the correct path towards the goal(s) you have discussed and agreed in the briefing. Because you are still involved in training, there will certainly be a need for correction, redirection and encouragement. The debriefing will only come to a conclusion when the student fully understands what has been achieved, what needs to be corrected, the location of any shortfall and how that should be overcome. Therefore, a good debriefing will enhance the training and increase its overall effectiveness.

The Significance of a Well-thought-out Debriefing

- **To identify the student's strengths and shortcomings.** As an OJTI you need to be more conscious of your student's strengths, they will not be as readily visible as his weaknesses. In many ways our minds are 'make wrong' machines, often focusing in on other peoples' shortcomings. An accent on strengths will confirm in the student's mind as well as your own on what positive accomplishments have been made. Remember, good work that goes unrecognised over a period of time will lead to frustration and resentment on the part of the student. Weaknesses, of course, need to be discussed and the causes analysed. Bear in mind to relate your criticism in a positive way and to look at the development of your student's professional attitude as well as his technical abilities.
- **It is an act of reinforcement.** Discussing important aspects of technique in a relaxed atmosphere, away from the operational environment, will help to strengthen and consolidate these and other aspects in the student's mind.
- **It encourages the student to analyse his achievements.** As has been mentioned students will initially be very dependent on your opinion; they will need your help in forming conclusions. After a while, however, they will have more insight and be able to make personal judgements but will still require your guidance for these conclusions to be accurate. Let us restate the concept that students don't learn if the OJTI says 'right' or 'wrong', students learn best when, under the guidance of the OJTI, they are allowed to be the owners of their own truths.
- **Personal commitment to improvement is encouraged.** Students must be made aware of their problems and if remedial actions are given as constructive advice, they will focus on improvement and be

personally committed to making that improvement. Your 'bottom line' must be one of honesty, your students will respect you for your professionalism in this respect.

How then do you go about debriefing your student? It is essential that you extract every item of value from the practical work he has done. Unless therefore the debriefing is carried out in a positive and organised way, there will be a training loss, time will have been wasted and the student himself will sense that the session has ended in obscurity. The debriefing environment will not have lent itself to open discussion, students will not have been able to voice their opinions and explain why they carried out certain actions. They will not have had the opportunity to ask questions or to ease any uncertainties revealed during the practical work. The student is waiting for a review and is looking forward to receiving guidance and pointers for the future. He could be left with a feeling of discouragement and uncertainty. The signposts would have been removed and the direction forward made unclear.

It should be evident by now, that the debriefing should be an adult to adult discussion and that, of course, is a skill in its own right. So how do you go about a debriefing in a way that will be viewed as positive? Although there are a few pitfalls for the unwary or inexperienced, and we will work through these as we proceed, the following structure should ensure success every time.

Firstly, it is necessary for you to realise that, after a busy or complex training period your student may not be receptive to discussion or to your advice, especially if things have not gone as well as he would have liked. It will take time for him to come to terms with what has happened and to be a willing partner in discussion. People do not often talk sense when they are tired and emotional and generally speaking, both the OJTI and the student are often in this mood immediately following the training session. For your part, you too will need time to gather your thoughts and to structure your feedback. You may therefore feel that a short break will achieve these ends but don't leave it too long before you give your feedback, you will start to overlook important information.

Whatever the situation, try to avoid debriefing your student in the training position or even in the operational environment since these places are a source of constant distraction and will not give you the privacy needed. Having found a suitable location you will find it easier to keep your conversations at an adult to adult level if you sit with the student, perhaps at a table with each of you occupying an adjacent side. This will enable you to share information visually and allow you to maintain the desired eye contact.

- At the start of the debriefing, **put your student at ease**. How you achieve this will in many ways depend on your personality. Often an inconsequential reference to a controlling situation will ease the two of you into the ensuing discussion. Do be careful with your references at this point since an insensitive casual remark may be taken very seriously by the student who is impressionable and receptive to everything you have to say, so don't ever let the subject of your

humour, for example, be something your student has *done*. Similarly, a blanket statement such as 'That was a good session' or 'That wasn't so good' will detract from the effectiveness of your debriefing and should therefore be avoided. A positive comment at this stage will remain uppermost in the student's mind and much of what you have to say will go unheeded, small weaknesses will go unheard. A negative comment will undermine his confidence and may make him very defensive from the outset. Remember you are about to balance strengths and weaknesses in a way the student can relate to.

- To start with, always **ask your student for an opinion on what has taken place and how he feels about his accomplishments**. A question such as this helps you to establish a discussion start point. It also helps the student to relax because although you will choose the start point, he has already broached the subject. If the student's overall opinion mirrors yours, it will make the task of debriefing that much easier. If, however, it differs considerably, then at least you are aware of it from the outset and your next task will be to modify your student's opinion. The use of probing questions will be a valuable aid in achieving this. If your student has performed really badly but is unable to appreciate that his performance really was not that good you must start to question him about the particular aspects in which he felt he was successful. At this point the student has to think very hard and by continuing the use of probing questions about various aspects of his work you will need to bring the student's opinion down to a level that is coincident with yours. The reverse will apply if the student did quite well but is overly self-critical.
- We now enter the debrief development phase. The order to proceed is most important; the student has given an opinion and so is attentive and relaxed as you open the discussion on this debrief phase of the training. You need to **first look at the main strengths revealed** during the training session, and then in what may be seen as a descending order, to review the remainder of the student's efforts. By starting with the positive the student will be built up to a point where he will be better able to accept the revelation of his weaknesses. Start with the main strengths first of all and then lead on to discussing other strong positive points that were displayed. In order to determine the student's strengths, we must compare his performance with the objectives set out and accepted in the briefing. What if the student has made repeated errors or had an all round miserable time? Praising him for some insignificant behaviour will make him feel subtly manipulated. When he has had a poor performance, communicate empathy (understanding) but not sympathy (feeling sorry for him). All students have bad days now and then, and they will appreciate that you understand that.
- Often other things will have occurred that you feel you should mention. Mention them by all means but don't fall into the trap of allowing them to sidetrack you from the main issues. It is so easy for these side topics to become the main discussion points of the debriefing.
- Now is the time to **review the main weaknesses** that emerged and thereafter to discuss whatever weaknesses of a less important nature

appeared during the training session. Do remember to analyse the problem in order to reveal the true source and thereafter to agree on what should be done in future to ensure that these weaknesses do not repeat themselves. Again your reference for this part of the discussion should be the aims and standards you both agreed on in the briefing. It may well be that the student has many weaknesses and realises it for himself. Don't make his life a total misery by heaping one problem on top of another until he loses all understanding. Discuss only the major weaknesses, solving one or two important problems will often lead to the correction of many smaller ones.

At this point the debriefing can be brought to a positive and clear conclusion by:

- **Reviewing the main points again.** This is where you balance the student's strengths and weaknesses in his mind, re-emphasising the ideas and advise you have given in order to correct the weaknesses. The accent here is on the word *balance* and this review is merely a summary of the discussion you have had.
- **Give the student a clear and acceptable overall assessment of his level of achievement.** By this stage the student should recognise his level of achievement. It is important that he does not misjudge his performance, either too highly or too lowly. This, therefore, is a point at which you must be totally honest with him. Being honest seems to frighten many of us, we feel perhaps that we will discourage the student or alienate him. Remember two things, it is not what you say but the way in which you say it and, **to deny a problem is to deny the person the opportunity to overcome the problem.**
- **Give the student the occasion to ask questions.** It may very well be that some part of the debriefing was not well understood or maybe the student would like to run over one or two of the points again. Invite him, therefore, ask questions.
- Finally, **always finish on a friendly and encouraging note.** By finishing in this way, your student's future co-operation is secured. Of course, if he has had a good training session and he is progressing well, it should be relatively easy to end positively. If, however, things did not work out so well or his progress is erratic or stationary, you should reassure him of the fact that your number one priority will be to help him through these difficult times. This should ensure that he will play his part in overcoming his difficulties.

Remember: Criticise only after having listened to the student's explanations.

Highlight problems in real terms.

Always agree on a positive solution.

Finally, direct your student towards the next step in his training.

FEEDBACK APPROACHES*

Corrective Feedback Approaches¹

- Immediately describe the event in behavioural terms and explain the effect. Alternatively, ask the student to describe the event.
- Ask what happened. Spend some time at this point in using your questioning skills to gather more information. Don't assume the student is at fault or use blaming.
- Help to be accountable for his actions. He should see himself as someone who is willing to correct himself, not as a victim.
- Develop a plan of action to deal with the problem, help to correct the situation and reduce the chances that it will re-occur in the future.
- State your confidence in the student's ability to handle the situation.

Supportive Feedback Steps

- Describe the specific action and result you are supporting.
- Explain the positive results of the accomplishment and your appreciation.
- Help the student to take accountability for the success.
- Link to other possible success areas.
- Thank and compliment the student on a job well done.

The Ten Principles of Feedback

1. Give feedback on the behaviour rather than the person.
2. Give feedback on observations rather than perceptions.
3. Give feedback on description rather than judgement.
4. Give feedback on specifics rather than generalities.
5. Give feedback on sharing information rather than on giving advice.
6. Give feedback on exploring alternatives rather than on having the right answer.
7. Give feedback on the value to the recipient, not to the giver.
8. Give feedback in an amount the recipient can use.

¹ Supplied by RANA Process Technologies Limited (Canada)

9. Give feedback in the appropriate time and place.
10. Give feedback on what is said rather than why.

ASSERTIVENESS

Assertive behaviour is an adult-to-adult behaviour. (See the section 'Personal Interactions') It is essential if people are to work cohesively and effectively in teams or with individual students.

Assertiveness is a necessary substitute for the typical autocratic or aggressive behaviours some people adopt when confronted with a difficult person or situation. It is a means of gaining the attention and respect of others whilst encouraging *them* to respond in an adult-to-adult way.

Sometimes in coaching we are confronted with students who will not respond to the choices offered or who exhibit behaviours that cause disquiet and who, in spite of being advised that their behaviour causes concern, continue with similar displays.

As is explained in various sections, an aggressive, controlling parent or oppressive response may alter the behaviour temporarily or send it underground but such an approach will not bring about any long-term change. An assertive appeal to such a person is far more likely to bring about a modification in the student's behaviour.

The first and most important component of assertiveness is honesty that is being honest with the other person and ourselves. The second component is relevancy. In using assertive behaviour it is important to separate emotions from the facts of the situation and to deal with only the relevant facts. The final part is the consequences of the behaviour continuing, that is 'the bottom line'.

In order to provide you with direction, the following *mnemonic* may help.

- **D**escribe the situation or behaviour that needs to change and how you feel about it.*
- **E**xamples. Describe one or two situations where the behaviour was shown.**
- **S**pecify the change you wish the other person to make.
- **C**onsequences. Describe the positive consequences of the change *and* the possible negative consequences should the change not occur.

*Note 1: By focusing the action on yourself, the person receiving the criticism will not interpret it as a personal attack.

**Note 2: Deal only with observed occurrences, that is facts. By giving only one or two examples you will avoid putting yourself in a controlling position. The more examples you give, the more defensive the other person will become.

You must give the person receiving the criticism time to respond and you may have to remind him of this conversation from time to time until he responds completely. Ultimately, you must, however, 'stick to your bottom line' should no change occur.

SUMMATIVE ASSESSMENT AND WRITING THE REPORT

This section of the documentation and the associated practical exercises is designed in order that the reader shall:

- **understand the role of regular summative assessments in the student's development;**
- **write clear and factual training reports;**
- **be aware of the potential pitfalls to maintaining objectivity when assessing student performance.**

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INTRODUCTION

The training report is important, it links the student and the trainer to the work carried out over several training sessions. It is a vital link in the training chain and unless it is completed in a way, which conveys useful information for perusal and action, it has failed. In the case of writing a training report it is essential that we give all our attention to the clear, concise, complete and correct completion of the report, otherwise all our efforts will have been wasted.

For any particular stage of training we need to make a record of whether or not the objectives set for the designated time period have been achieved and if not, why not? We should write down what has actually been achieved and make our report in a manner, which will provide a useful link to the next training period.

The ideas contained in this section are equally applicable to formative and summative written assessments. In the case of formative assessment, the students should hold the day-to-day summaries so that they can review their own progress, look at their personal shortcomings and prepare themselves to carry out the necessary adjustments. A good report will provide valuable and permanent feedback on performance. OJTIs will be able to keep each other informed about a particular student's progress and any problems will be common knowledge to the trainers involved, in order that student weaknesses may receive concentrated attention at the right time. The formative summaries will be the basis of the summative reports which, in turn, should be an independent appraisal, as recommended in Chapter 8 'Coaching Practices' which presents part of your course introduction.

As an OJTI or as an assessor, you will be required to assess the performance of a student and to commit that assessment to paper. Training managers will require this knowledge for reasons that will be given. In general the assessor should confine his comments to the student and refrain from evaluating the system. The main function of a training report is to provide information about a student to the training manager amongst others. He in turn may, as a result of what has been written, sense that there are certain inadequacies within the training system. Let us emphasise at this point that the principle reason for summative assessment is to monitor a particular student's progress by assessing his performance.

Assessing a student's progress or performance means measuring how well he is able to undertake the tasks. The critical word here is 'measuring'. Making a measurement means comparing your students performance with a fixed standard.

Without a well defined standard the OJTI or assessor can be misdirected into comparing the student's performance against widely differing objects of comparison. Within the realm of OJT there is only one basic question which the assessor should ask and that is 'can the student do the job to the required standard'?

POINTERS FOR BETTER SUMMATIVE REPORT WRITING

A training report communicates a great deal of information, which may be in the form of fact, opinion or recommendation. One of the most common failings in report writing is the confusion between fact and opinion. A good report will therefore focus on observable occurrences or fact and leave considered opinion to those areas where an opinion is sought for a specific purpose. Don't give unsolicited opinion and keep your opinion under check until either your training management asks you for it, or the training report specifically requests it.

Unsolicited and vague opinion is of little value in a training report because training management wants to deal with, first and foremost, facts (what the student has done and not what he is).

- **Write down what the student is and not what he is not**
Expressions such as, 'not bad at ...' or 'not very good at ...' can often leave considerable doubt as to what the student really is. It is far better to use more helpful expressions that express what the student actually is. Expressions such as 'His phraseology is standard. He does, however, speak very quickly and pilots often have to ask for the instructions to be repeated' or 'He is unwilling to take decisions' are very much more helpful than expressing what he 'is not'.
- **Do not be imprecise as to the nature of a problem**
Often statements used are so vague as to be decidedly unhelpful. Use positive expressions like 'He often uses an incorrect identification procedure' or 'He has difficulties in selecting suitable radar headings' or 'He understands and uses the correct procedures but he is slow in making the appropriate decision'.
- **Specify as exactly as possible the observed problem and only give a recommendation when you are certain that you have been able to correctly identify the genuine cause.**
Any difficulties you observe the student having are the result of a problem, the observable tip of the iceberg. The causes or the real problems are not always readily clear.

The behaviour of the student, either technical or attitudinal, is like a beacon sending out signals and is therefore easily observable. The reasons the behaviour took place, the student's thoughts, his feelings, motives and attitudes are not always so obvious. Be certain to specify what you have observed as accurately as possible and only suggest remedial action when you are very certain that will stand a good chance of overcoming the problem.

Make statements of fact about which you can be certain and which you can justify

Remember that you know your student, you know his strengths and his weaknesses better than the person who will be reading the training report does. You have all the background information behind your

statements. Remember, the reader does not and that person may ask you to justify your comments. If you only mention what you can be sure about, you will never be confronted with the embarrassment of being unable to justify your comments. If you offer vague opinion it is quite likely that your opinion may be wrongly accepted as fact. People can, and often do, state an opinion as if it were a truth and that opinion is often accepted by others as being factually correct, especially if it is written down, and in the course of time can actually become a reality because everybody expects it to happen.

- **In order to receive valuable feedback, involve your student in the summative assessment**

There are several methods of involving your student actively in the process of completing a summative assessment. One useful technique is to firstly discuss your assessment with him and then to ask him to summarise your discussion in his own words. If you are satisfied with the accuracy of his statements, it will be a clear indication to you that he has fully understood the content of your discussion. Additionally, he will better understand these comments when he next reads them because it was he that wrote them. Another technique would be to ask your student to note his own ideas separately and to take them into account when you write the report. This will give you valuable feedback on the student's capability to recognise good work and his ability to judge his own progress. The method used by most OJTIs is to write the report for himself and then to discuss the findings and statements with the student. Do, however, consider the alternative methods mentioned.

- **Write your report in a way that everyone can read it**

Most of us seem to have been trained as pharmacists or doctors! We are able to decipher our own handwriting, but remember you are not the final destination of your report. It is essential that the person on whose desk it arrives is able to clearly read and understand your statements. Finally, being brief and clear does not mean using pages to write a report when a few paragraphs would suffice. As long as you are clear, concise and cover all the essential points in a correct and factual way, that is enough.

POTENTIAL PITFALLS TO MAINTAINING OBJECTIVITY IN SUMMATIVE ASSESSMENT

The assessment of another person, of his attitudes, abilities and on the job behaviour represents a very complex psychological process which has received a great deal of attention. Most of this work has been directed at ways of reducing subjectivism by the introduction of standardised assessment forms. To be fair, considerable progress has been made in this respect.

Despite the introduction of such forms, the main source of error, distortion and bias lies with the person carrying out the assessment. During a training programme such as this, it is impossible to train you out of these pitfalls. However, by becoming more aware, you will be more conscious of the quality of statements you are making about your student.

What follows is simply some of the possible causes of distortion during assessment.

- **The halo effect**

This is an error that occurs when the OJTI or the person carrying out the assessment bases all of his assessment of the student's abilities on one or two areas that he, the OJTI or assessor, considers to be essential to be an air traffic controller. Each aspect of the student's work must therefore be considered as being distinct and independent of one another.

- **The error of Leniency or severity**

Although on opposite ends of the scale the error of leniency and that of severity are very similar in nature. The problem arises from the feelings the OJTI or assessor forms about the student's strong or weak potential with respect to becoming a controller. The OJTI will thereafter choose those aspects either favourable or unfavourable that justify his general impression.

- **The consistent error**

This error refers to the tendency to be systematically severe or lenient in one's assessment. Therefore, some OJTIs or assessors may rate a student's performance poorly whilst others will be more inclined to consider that everything is 'Good, there are no real problems'. The coach's personality and his expectations with respect to the student's performance will largely explain the emergence of this error.

- **The error of contrast or similarity**

The problem here arises when the OJTI or assessor compares the student's abilities, attitudes and behaviour to his own.

- **The error of central tendency**

This is an error that involves a refusal to give a very high or low assessment to the various aspects even if the student deserves such a rating. The result, therefore, is a series of assessments which consistently meet the minimum performance required. One major source of this error could be the assessor's uncertainty or insecurity with respect to assessing the student's on-the-job behaviour.

- **Selective perception**

A human being sees reality in terms of his own personality, e.g. in terms of his values interests and attitudes. The process of selective perception clearly shows the importance of the role played by the coach's personality in assessing the student's on-the-job behaviour. In simple terms, according to the psychological process, the assessor perceives and evaluates the student's behaviour in terms of his own characteristics such as abilities, professional competency, attitudes and views to ATC.

If we look closely at the process of social perception, we will see that if someone takes a positive or negative attitude towards another person, this will determine whether he observes positive or negative aspects in that other person's behaviour.

Thus, from the moment the OJTI or assessor forms an opinion (often based on very little) of the student's potential, he will tend to perceive only those aspects of the student's behaviour that conform to this judgement. What follows then, is a process whereby he applies this opinion to all aspects of the student's behaviour and in doing so his initial opinion becomes confirmed.

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STRESS

This section of the documentation is designed in order that the reader shall:

- **recognise the symptoms and effects of stress in training;**
- **be aware of appropriate actions to manage stress.**

This section was written from an original contributed by the Deutsche Flugsicherung Academy, Langen, Germany.

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INTRODUCTION TO STRESS

The aim of this brief introduction to the subject of stress is to provide you with an overview, which will better enable you to recognise and understand stress and to better cope with stress in your professional lives, specifically when dealing with students.

THE MEANING OF STRESS AND YOUR REACTION TO IT

Most people know the feeling of having a good day and the times when nothing will go right. It is often said that a certain amount of stress is good for us and is even needed to do a good job. Whilst this is undoubtedly true, how do we quantify 'a certain amount'? To experience stress in our daily lives is normal, it is an everyday fact of life and you cannot avoid it. You only have to look around you to see people in various states of tension. Our natural and social environments impose so many exigencies upon us, to which we have to adjust. Additionally, we sometimes impose demands upon ourselves in trying to achieve our everyday and long-term aims and then our attitudes, values and belief systems impose yet more demands upon us.

It is important to realise at this point that not every demand upon us causes stress, neither does stress always take a negative or harmful form.

To be stressed means that there is a heavy demand upon us which requires considerable physical and/or mental energy to cope with it or which even exceeds our powers of coping from time to time. We feel a tension or a mismatch between the demand placed upon us and our own abilities and/or our wants. Such a demand is known as a stress agent, and our complex of experiences and coping activities is called the stress reaction.

There are multitudes of different sources of stress in our life, some of which we will go on to mention.

We are constantly bombarded with physical or environmental demands such as noise, heat, pollution, time pressures and unpredictable traffic levels.

Similarly work produces increasing demands upon us such as busy control positions, examinations or assessments or the performance of student, especially if that student is having problems. Indeed, the reality of long-term involvement in training or training fatigue can be seen to be a stress-agent.

Then of course, there are the social or interpersonal demands that we have to contend with: A nerve-racking colleague, conflict with a supervisor or peer and even isolation from the team or professional or social group.

Finally, we impose personal demands upon ourselves, sometimes severe, such as the ambition to be an excellent controller or the best OJTI. Occasionally our self-esteem is at a low ebb and we decide to push the panic button. And then there is simply the physiological stress of just having aches and pains in the neck and shoulders, illness or even the problems that shift-work brings with it.

Let us reiterate that short-term stress is useful and it gives us the impetus to respond to problems. When our stress system is 'on', chemical changes occur in the body, which prepare us to deal with complex and sometimes troublesome events. When the activity is over the short-term symptoms return to normal again and no harm will have been done; the body adapts and we remain healthy. However, when this level of stress continues over longer periods, harm may be done since the body is only designed to cope with a limited amount of short-term stress.

STRESS REACTIONS

Whenever we perceive something as being a stress agent we carry out an appraisal. For example, if a student perceives a significant increase in the level of traffic, then *he appraises* this as something that demands competent controlling ability otherwise it will become a threatening situation. This we may refer to as the *primary appraisal*.

Immediately following this, the student will carry out a *secondary appraisal* where he estimates his own abilities, his knowledge, his experience with traffic of that kind and his actual physical and mental circumstances. He will also assess what possibilities are available to help him cope with this traffic level and whether or not social support is available, e.g. whether the OJTI is available to take over in time should he, the student, fall short of managing this amount of traffic.

These appraisal processes may happen quickly and automatically or may involve a level of conscious thinking. In the course of coping there is a continuous and on-going re-appraisal of the stress agent and one's coping efforts, coping abilities and any available support.

Example

A student in approach control is busy with traffic that he is coping with adequately, but it is forecast to increase. The OJTI that he has at the moment is content to sit back and let him control the current traffic, offering little in the way of advice, suggestions or help.

The student has just been told that a runway change is imminent but he has never been in position when a runway change has taken place, *he makes an initial appraisal of the situation*. The student assesses matters by saying to himself 'traffic is increasing and a runway-change is necessary. I have not encountered this situation before, I believe that I can cope with the traffic increase but I am not exactly sure about how to manage the runway

change. My break is not due yet, my OJTI is unlikely to help me unless I tell him I am in trouble and even then he may make a fuss and criticise me. What shall I do?’

To the student this situation is seen as a considerable threat. This stressor starts a stress reaction with certain thoughts and negative emotions. The student may think something like ‘I pray that I am able to manage’, he will feel anxious and he may have to fight back panic. In this tense mental state, which probably prevents him from performing to the best of his ability, he tries to struggle with the traffic and the runway change.

The stress reaction always contains thoughts, emotions, other physical reactions and coping behaviour. The high degree of physical and/or mental energy required is mobilised by special physiological processes. If coping is successful, contentment, delight and release follows. If, on the other hand the coping is unsuccessful, then the stress characteristically worsens and the situation may lead to overloading.

In general, stress weighs us down if there is:

- an extreme stress agent, e.g. you are exposed to a misfortune and left with feelings of helplessness;
- a heavy stress agent which requires too much energy to cope with e.g. a long-term working project that exceeds your capabilities;
- too high a frequency of minor stresses, e.g. a lot of daily problems.

An overload of stress has several negative short-term effects, which are mentioned below. It also has harmful long-term consequences that increase the risk of several classes of disease and deficiencies. It should be realised, however, that there are huge individual variances as to how much stress somebody is capable of managing.

The whole process from the perception of a state of affairs to the long-term consequences of stress on one’s health is called stress dynamics.

It is not every type of stress that creates a risk to the health, only stresses that contain certain negative emotions such as hostility, rage, fear, panic, anxiety, frustration, distress, despondency, guilt, etc. When talking of stress in general we normally only refer to these negative types.

There are, however, classes of stress that are primarily associated with positive emotions. The positive feelings concerned are interest, involvement, ambition, pleasure and exhilaration, etc. Whether stress is of a pleasant or unpleasant nature depends upon the outcome of the primary and secondary appraisal.

Looking at the entire field of different types of stress, i.e. of stress agents and stress reactions, we can classify them into three fundamental types.

<i>Stress Agent</i>	<i>Stress Reaction</i>
<i>Challenge</i>	<i>Effort with (mainly) associated positive feelings</i>
<i>Threat</i>	<i>Effort allied with negative feelings</i>
<i>Harm/Loss</i>	<i>Negative feelings with related passive effort</i>

STRESS AGENTS

Challenge is a demand that stimulates you but is difficult to cope with. It even has the added risk of failure subject to the circumstances and your present abilities. If you are both self-confident and optimistic enough to think that you are able to master it, it is an attractive demand. It is an opportunity to apply certain of your abilities at the highest level and, perhaps, even to develop them further, e.g. taking on a new and interesting task containing some uncertainties. The task may be coaching a student who has potential, but whose performance is, at the moment, erratic and occasionally so unreliable that it is possible that he may not validate. If you are motivated to help him and have sufficient confidence in your coaching abilities, then you will approach this new task with interest, energy and a desire to be successful. It may be that in doing so you sometimes feel a little uncertain or even frustrated, but you continue to make an effort with positive feelings as long as you remain confident.

A **threat** is a demand made upon you that you are not looking forward to or are afraid of. Similarly, it could be a task requiring an effort that you do not wish to make. You have to cope with the demand in order to prevent some harm or loss. A threat can manifest itself in one of three forms:

- Something happens that you do not like or are afraid of that will cause some harm/loss if you don't intervene. If the imminent harm or loss is simply an inconvenience, the typical feeling is anger. For example, by mistake you have been scheduled for duty at a time you asked to be free and you have to have the schedule changed.
- If, however, the imminent harm or loss is potentially serious and you are, at the same time, uncertain as to whether or not you can cope, the typical feeling is anxiety or dismay. An example of this is when you return to work after a prolonged absence due to illness or an extended period of leave and the supervisor allocates you to a position where the traffic loading is traditionally high. In both the inconvenience case and the serious-threat case you make an effort but your feelings are negative.
- You have to do something that you normally enjoy, or can do with neutral feelings, but this time there are conditions under which the affair becomes an ordeal for you and you do it only because not doing it would produce some harm or loss. For example, you feel unwell and would like to go home to rest. However, you force yourself to continue

because you know that the workload of your colleagues will increase and they may have problems. Here also you make the effort albeit with negative feelings.

- It often happens that the involvement in **a challenge** changes into a fight against a threat when success is becoming doubtful. It may be that there is a mixture of challenge and threat from the very beginning.
- In such cases, except for the desire to cope with the challenge, there is a compulsion or a need to reach the goal. The compulsion is often an inner one-one needs success for self-esteem. It is at times like these that you make an effort with negative feelings or an effort with a high proportion of negative feelings.

A harm or loss is a very peculiar kind of demand. In the first place it is not a demand to do anything, but to endure something that has happened or cannot be changed and to put up with it. For example, you have to fulfil continuous duties as an OJTI, so much so, that you don't look forward to coaching any more. You are frustrated by your present predicament because there is little or no possibility of changing it in the foreseeable future. In very serious cases of harm or loss there is not only frustration and despondency, but also an associated depression and resignation. In the face of harm or loss, there is no chance of an active stress reaction. The necessary coping consists of a passive stress reaction. It is a passive mental effort that can cost a lot in terms of energy to endure the harm or loss and to tolerate it. You experience negative feelings with a passive effort.

MAIN SYMPTOMS AND EFFECTS OF STRESS IN TRAINING

In spite of any preventative measures you might take, stress with negative short-term effects on training will unavoidably arise, both on the side of the student and the OJTI. Such a stress is the target of many of the methods of stress management.

In order to employ these methods it is necessary to recognise the symptoms of such a stress and the way in which they interfere in training. Symptoms are most conspicuous when the stress is heavy or even overloading. The symptoms of these degrees of stress lie both in the physical and emotional area. We go on to outline some of the main symptoms and indicators in both of these areas.

SOME MAIN SYMPTOMS OF CONSEQUENTIAL OR OVERLOADING STRESS

Physical Reactions	Emotional Reactions
<i>strained facial expressions, distorted face</i>	<i>marked anger, rage</i>
<i>nervous movements with fingers or feet</i>	<i>irritation, aggressiveness</i>
<i>faster breathing, faster heartbeat</i>	<i>anxiety, panic</i>
<i>Stuttering</i>	<i>hyper-vigilance, apprehension</i>
<i>tense muscles and trembling</i>	<i>insecurity</i>
<i>pale face or blushing</i>	<i>discontentment</i>
<i>Hyperactivity</i>	<i>mood swings</i>
<i>sleeping problems</i>	<i>sadness, worry</i>
<i>Weariness</i>	<i>withdrawal, resignation, depression</i>
<i>Backaches, tension, headaches</i>	<i>apathy, boredom</i>

These symptoms do not necessarily appear simultaneously and some physical symptoms may have causes other than stress. Furthermore, stress is frequently not so discernible as to display such obvious clues. Some forms of stress, even of a major degree, may be hidden by conscious activities.

With regard to training, however, any stress that interferes with the quality of training must be considered to be relevant. Interfering consequences are at the same time reliable indications of stress. The main possible short-term consequences that interfere with the student's learning and the OJTI's doing a good and effective job are as follows:

MAIN EFFECTS OF STRESS INTERFERING WITH TRAINING PERFORMANCE

impaired concentration	absent-mindedness, day-dreaming
impaired memory	Forgetfulness
constricted perception, visual narrowing	Diffusion of attention
situational stereotyping or cognitive channelling	poor judgement
simple habits of problem-solving	simple or impulsive decisions
circling, repetitive thinking	Thinking blockages
slowed-down performance	task-irrelevant behaviour

There are other symptoms such as *limited information intake, premature hypothesis, over-adherence to a plan, failure to monitor the plan and solving easy problems.*

WAYS OF PREVENTING OR REDUCING STRESS IN TRAINING

Stress of the 'threat' type and of the 'harm/loss' type is capable of interfering significantly with training. Both types may arise as a result of the training activity or originate from events outside training. If stress from these sources is of a major degree or overloading, it will have counterproductive short-term effects that unquestionably interfere with training. The best method of coping with the stress that interferes with the student's learning and your doing a good job, is to prevent it happening in the first place. After all, *'prevention is better than cure!'*. There are several possibilities at your disposal to avoid stress for both the student and yourself. Here we focus simply on stress that arises from the training activities.

As far as the student is concerned, there are four essential conditions for being equipped to cope with demands of OJT without unnecessary stress:

- A high, but *realistic* self-confidence concerning one's learning abilities. Feeling unsure or uncertain generates pessimistic thoughts and feelings that interfere with learning.
- To have a good learning environment, especially to have assured and reliable support from the OJTI. Not having the necessary social and professional assistance will contribute to feelings of insecurity and vulnerability in learning.
- Knowledge of the training requirements and what is involved in the actual task. To know that a demand exists yet to be unaware exactly what it is and not know how significant it is generates stress per se.
- A self-assurance in controlling or accomplishment in the actual task. Performance successes are an essential facilitator of belief in one's learning ability, as well as being a principal motivator.

As an OJTI you should attempt to satisfy most if not all of these guidelines and conditions and, in doing so, you will help prevent unnecessary stress in the student in the following ways:

- In training, the student should feel entitled to receive good training and must not feel like a petitioner to whom training is given as a favour. Under different conditions he will be left with an unsettled feeling that he is unable to rely completely on the support of his OJTI.
- Offer yourself as a role model and trainer who the student can approach with whatever professional problem he has. This does not mean that the OJTI has to deal with every problem the student may have, you need not and indeed should not overload yourself. It is invaluable for the student if you have an open mind concerning his problems.
- The student must feel like an accepted member of the team. Diversity in professional competencies should not exclude the student nor should

he be looked upon as a second class citizen. Such distinctions generate unnecessary impressions of 'being on trial' all of the time.

- Always make known to the student what objectives you wish him to achieve.
- The student should achieve an adequate amount of success and recognition of achievement, especially during the early stages of training when self-confidence naturally tends to be unstable.
- Acknowledge the accomplishments of the student and deal with his errors as opportunities to learn.
- Address any recurring 'controlling' problems as soon as possible. Failure to do so will have a negative and therefore undesirable effect on the student's self-confidence.
- The student should feel protected at all times, regardless of the type of error he makes. If there is an incident whilst under instruction, the OJTI must not place the blame squarely on the shoulders of the student. The student should rely on the overall responsibility lying with the OJTI. Under different circumstances he will be left feeling very insecure and subject to a high degree of stress.
- Inform the student regularly about his progress, his strengths as well as his weaknesses. The criteria used for assessment should be made clear and the information given should be absolutely correct. Otherwise there will be a acute uncertainty, insecurity and stress will result.
- When a student is being trained by different OJTIs, these OJTIs should make sure they impose the same task demands on the student and use the same criteria for assessing performance.

A further general form of unnecessary stress is *overload*. Be careful not to overcharge the student relative to his energy. For example, at the start of training, you might overload him by making him work for long periods without a break, especially when traffic levels increase significantly near the end of a long training session.

Apart from avoiding unnecessary negative stress on the part of student, you should attempt to contribute to the *positive* stress of the challenge-type. If you manage to contrive to coach in a way that takes into account the self-confidence and actual strengths and weaknesses of the student, and yet remains challenging, you will go a long way to becoming more effective and efficient in training.

In preventing stress in the student you will indirectly prevent stress in yourself. Furthermore, there are several ways in which you can avoid stress in yourself, stress that could arise unnecessarily during coaching. Some of the main techniques are:

- Co-ordinate with training management and supervisors, and provide well-organised and well-structured conditions for training.

- Prepare the training well. There should be an comprehensive training plan that supports you in the course of training. Every coaching session should be subject to sufficient and adequate preparation.
- You must have sufficient time for preparation and not be under undue time pressure when undertaking training activities. Try to ensure that there is little time pressure, certainly not to such a degree that it leads to a hectic mode of working. You should also be in a mental state that facilitates continued monitoring of the student's performance.
- You perform best as an OJTI if training is something you both enjoy and find challenging. Giving too much training can lead to training fatigue.

ACT NOW TO HELP YOURSELF

There is a lot you can do about stress. You are capable of doing far more than you ever thought. Decide what is really important for you. Overcoming stress is something we all should learn to do, but it does not 'just happen', although it comes easily enough with practice. Here are two basic approaches to doing something positive about it. The first is prevention, designing the stress out of your life, and then there is coping, finding ways to deal with or control stress.

Prevention

- *Job training*, the better a person is prepared for the job, the better he or she performs. Think of this training programme and how it is designed to better prepare you for coaching.
- *Job (re)design*, state your objectives clearly, define your autonomy, be active in giving and receiving feedback and participate actively in the things that affect you.
- Annual medical checks.
- Open, supportive attitude and behaviour.

Coping

- Recognise stress symptoms in yourself and others.
- Spend time on your communications and relationships. Stress at work is often the result of misunderstandings and personality clashes. Take these in your stride and develop a confidence in yourself and your own abilities. Be assertive and not aggressive when dealing with others.
- At the beginning of each day prioritise your programme and reduce stress by managing your time wisely. A busy person is not necessarily under stress and getting rid of stress does not mean doing everything slowly. Spend time to make time and that includes time for yourself.

- Do one thing at a time and deal with everything only once.
- Eat fewer calories, less fat and less sugar, live wisely. Take regular exercise, swim, walk, cycle or jog.
- Relax. Use the relaxation exercises and breathing techniques and make time for yourself.
- Develop support systems. Perhaps your family, friends or support groups.

What now follows are two simple techniques for dealing with the tensions and stresses that are an inevitable part of our daily lives. The ways in which stress, anxiety and tension affect us are in no way an indication of our worth and quality. There is therefore room for all of us to develop a routine of relaxation which is the body's natural remedy to stress. Similarly, the way in which we breathe has a dramatic effect on our well-being. The following will include both relaxation and relaxed breathing techniques.

RELAXATION AND BREATHING TECHNIQUES

There is a great need for all of us to become used to relaxing, slowing down and calmly becoming aware of how we are and what our priorities are. This will avoid our getting caught up in the confusion of events around us and our own over-active minds. Relaxation is switching off and physically and mentally letting go. Relaxation is not difficult, all we need to do is to focus on the act of relaxing and ignore all other distractions. The important matters that occupy our minds can be attended to after we have given ourselves a precious 'time out' session.

In order for relaxation to work, we need to create the right setting. Somewhere quiet, without disturbance and where we can sit down comfortably in a chair with our back supported or lie down would be ideal. If the room can be darkened, then so much the better.

Mental and bodily awareness are crucial to relaxation, we can only change if we know how we feel, so check how your body feels. Are you comfortably positioned? Relax your body until it feels limp, notice your mental state, are you tense or nervous? Is your head full of thoughts? Don't worry, all of this is quite normal. Whilst practising relaxation you will learn to turn your attention away from all of this and just focus on relaxing. Become aware of your breathing, its rhythm and depth and its speed.

The main ingredient of relaxation is breathing slowly and deeply from the abdomen. As you commence breathing, place one hand on the upper chest and the other on the stomach, just below the ribcage. First let your breath sigh out slowly. Then breathe in very gently, feeling your abdomen rise a little under your lower hand. Concentrate on the breath filling your lungs from the abdomen upward, there should be as much movement there as there is from the chest. Getting into the habit of this style of breathing is quite important as, when we breathe slowly, using only the upper chest, this can actually add to our feelings of anxiety.

Let the breath out again, feeling your abdomen drop back, letting the breathing out take a little longer than breathing in. As you settle into this vital aspect of the relaxing process, imagine, that when you breath out, you are letting go all your worries and tensions. Continue with this style of breathing for about three to four minutes and whenever you find your attention wandering, gently bring it back. You will notice that the distractions of thoughts and anxieties will gradually lessen.

Emphasise those aspects of your personality, which fall into the 'Type B personality' category. This would include characteristics such as being easygoing, patient and calm, being in control, flexible and co-operative, being able to accept criticism and willing to take a rest break without feelings of guilt.

Sometimes it is not a bad idea to sit back and examine just what it might be that is causing the stress. Control any anger and calm down, life at work and at home will flourish if you are able to relax.

TAKING THE TENSION OUT OF RELATIONSHIPS

In the following, we are simply listing methods for being more effective and confident in our relationships with others both at work and at home. Choose some of them and try to practice them as a part of a daily routine. They will not be new to you, the ideas are to be found in the various sections of this documentation.

<ul style="list-style-type: none"> • Develop an awareness about your own feelings, e.g. happiness, sadness, anger, pleasure, etc., and tell others. 	<ul style="list-style-type: none"> • Be realistic about perfection and what is achievable.
<ul style="list-style-type: none"> • Don't explode or brood. 	<ul style="list-style-type: none"> • Switch off' after work and before walking into the house.
<ul style="list-style-type: none"> • Use 'I' statements rather than accusatory or blaming 'you' statements. 	<ul style="list-style-type: none"> • 'Allow yourself at least a ten-minute rest period when you get home before erupting in relation to your day.
<ul style="list-style-type: none"> • Agree with someone for a change. 	<ul style="list-style-type: none"> • Learn to like yourself and emphasise your good points.
<ul style="list-style-type: none"> • Be aware of what others are trying to communicate, be a good listener. 	<ul style="list-style-type: none"> • Don't take yourself too seriously.
<ul style="list-style-type: none"> • Avoid making assumptions about others. 	<ul style="list-style-type: none"> • Make a healthy balance between your professional family and social life.
<ul style="list-style-type: none"> • Give people your time and respect. 	<ul style="list-style-type: none"> • Don't be afraid to say 'no'.
<ul style="list-style-type: none"> • Co-operate with others and be a good team member both at work and at home. 	<ul style="list-style-type: none"> • Practice relaxed and friendly body language.
<ul style="list-style-type: none"> • Ask for help and support when you feel the need. 	<ul style="list-style-type: none"> • Accept what cannot be changed.
<ul style="list-style-type: none"> • Talk to someone you trust. 	<ul style="list-style-type: none"> • Be committed to what you are doing in all aspects of your life.

THE SUMMARY

The essentials of OJT have now been covered, and we hope it has become clear to you that the role of the OJTI is a very complex affair. It is demanding and requires a lot of care and dedication. By now you should be conscious of the fact that to train someone without a real comprehension of the topics contained in this training programme and to attempt to proceed without a strategy or direction is wasteful in terms of time, financial costs, energy and student failures.

An overall training plan detailing the specific objectives that need to be achieved is essential to the efficiency of training, as are the procedures and practices that are encouraged throughout the programme you have just completed.

For your part, you are now aware of the necessity to adhere to the framework of the training plan. You will also appreciate that your own personal style is additional to, but should in no way replace, the training procedures we have given to you over the past two weeks. So let us summarise the process:

The training organisation and plan will have been made clear to you, permitting you to review the objectives and the task at hand. For your part you will have ascertained certain details in training terms. Who is the student, what in his previous training reports needs our immediate attention, what weaknesses need to be corrected in order to move ahead? You should be well prepared and ready for the forthcoming training task.

The day-to-day training begins with providing an environment within which the student feels at ease and is aware that you will provide total support. The briefing will set out the aims and standards anticipated for that particular training session. Don't harbour unrealistic expectations. You will have discussed the coaching practices you will use so that the student will know what he can or cannot do and what form your monitoring will take. It is important that he is well aware of these issues because they will give him additional confidence during the practical training and within the working environment. Freedom to ask questions is vital at this stage.

The central feature of OJT is the practical training itself. Depending on the previous training received, the initial procedure is very simple and can be adjusted to suit the stage of training and student abilities. The demonstration and talk-through phases need to be emphasised by the use of keywords in order that the student knows what is about to happen and just what stage we are at.

To be successful you must be able to assess when the student requires you to coach-to-learn or coach-to-perform. In the early stages of training you will usually coach-to-learn but not always. When the student's skills have progressed, most often you will coach-to-perform but that is not absolute either. Deciding which to use requires good judgement and a

co-operative relationship with the student so that he can tell you the type of help he needs.

The monitoring task is vital. You need to control and eradicate any negative traits that may manifest themselves. At the same time you need to be constructive and well aware that everything you say or do will be taken on board by your student, you are, after all, in a position of power and a role model for the student. Your own professionalism will provide you with a high credibility rating. Do not forget to offer recognition at the appropriate times and use probing questions in a thoughtful way.

Remember, we do not teach by mistakes but from time to time errors of a varying order of importance will occur. When they do happen you will need to make quick decisions on how you will deal with the fault. Be more conscious of the type of mistake being made and your available options in order that you extract the maximum benefit from it as a training tool, without lessening the student's performance. Students do learn from mistakes, but only when they are used in a justifiable manner.

Each training session must end with a comprehensive debriefing. During the debriefing phase training is continuing. This is a stage where strengths and weaknesses are discussed and brought into balance and where your student as well as yourself has a say in the proceedings. It is a confidence-building time and a clean up opportunity. If needed, you should criticise in a constructive manner only after listening to what the student has to say. Remember you are still within the coaching environment so there needs to be a review and agreement on future actions in the training.

At regular intervals a summative training report will be required which will provide primarily the student and training management with much needed information on the amount of progress that has been made. This should not be your task but that of an appointed, independent and suitably trained assessor. Should you have to write the training report for your student, remain objective and focus on facts, what has happened and under what circumstances, and do not offer unsolicited opinion.

Our aim was to raise your level of consciousness in the turbulent waters of coaching. Our success, yours and ours, will be determined in the weeks and months to come. We wish you every success as you enter a new and more enlightened phase of training.

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ANNEX B: TRAINING PROGRAMME FOR THE OJTI



TRAINING PROGRAMME

FOR THE OJTI

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Procedures, objectives and assessment forms for your personal practical exercises

This document contains the material necessary for the practical exercises associated with the Training Programme for the OJTI; it will give you an outline of your development during the course.

Please keep this document as your personal record. Give it to your observer or facilitator for him/her to complete each exercise's assessment.

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TRAINING PROGRAMME FOR THE OJTI - PRACTICAL TRAINING

Procedures to be Followed during the Practical Training Exercises

The practical coaching exercises are a vital factor in assimilating the methods, structures and procedures promoted in the theoretical sections of this training programme. They are constructed to give each participant adequate opportunity for practice in each of the domains of coaching techniques.

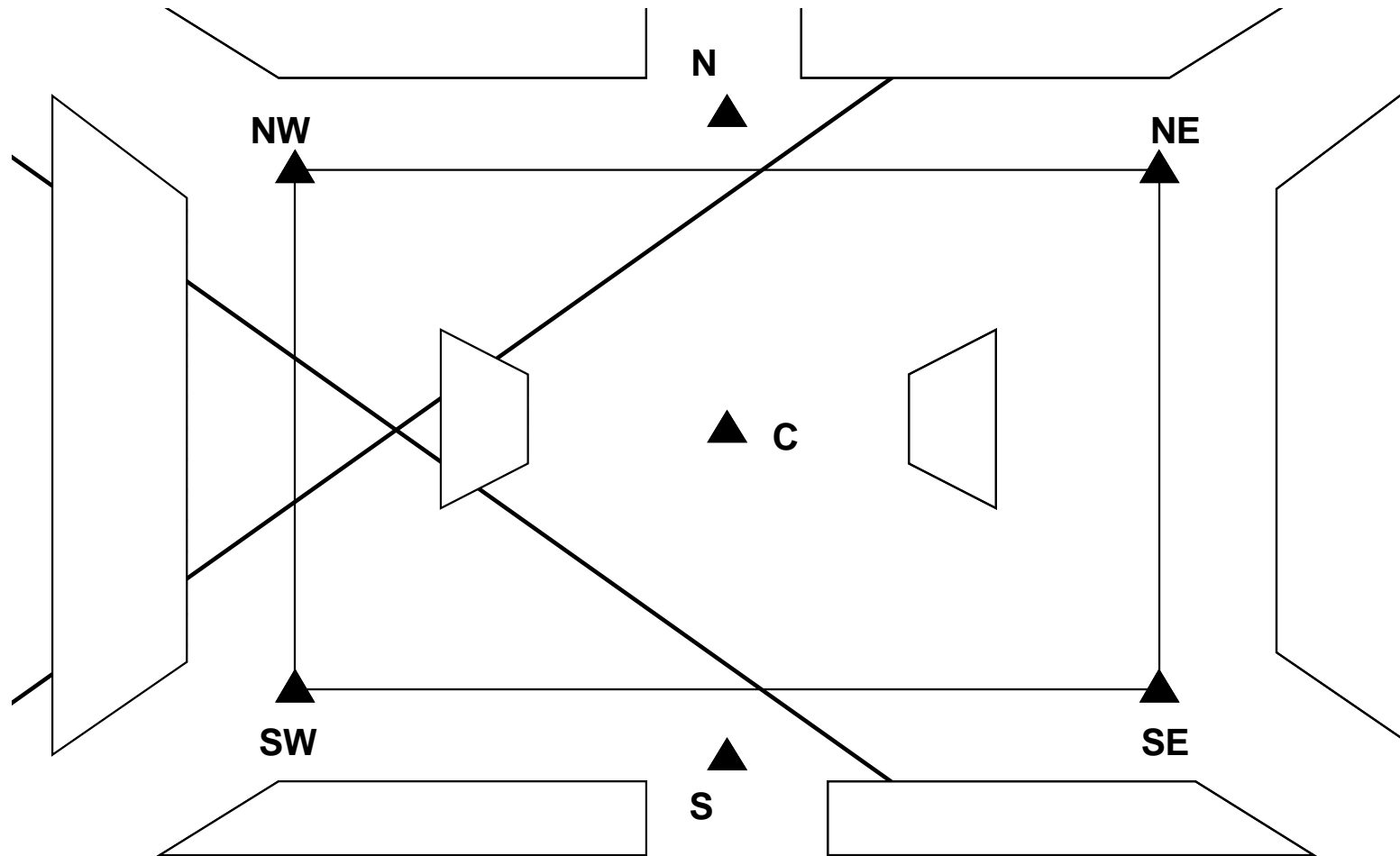
You, the participant, will be working in a small team where each of you will have a designated role to play. The team will consist of one participant practising as an **OJTI**, one playing the role of the **STUDENT** and the third participant **observing** the OJTI's techniques and thereafter giving him feedback on his efforts. Depending on the make up and numbers of course participants, there may be a requirement for a fourth participant to act as pilot to the exercise.

The observer has a vital role to play in the proceedings since it is he who will **observe closely the OJTI's practices** and will be asked to **give feedback** to him at the conclusion of the exercise, using the forms provided by the instructor. By watching and giving feedback, the observer will himself absorb a lot of information which he will consciously or unwittingly put into practice when the time comes round for him to take the role of the OJTI.

Many of the techniques the OJTI will be practising will be new to him and he will be trying in earnest to be successful. As part of the team, your collaboration is essential to the success of the exercises and to that end we sincerely request that each team member plays *no other role* than that requested by your instructor or facilitator.

You will feel slightly uncomfortable at the beginning since everything will be new, the airspace, the procedures, the content and the techniques. This is a process that is unfortunately unavoidable. Your instructor(s)/facilitator(s), however, will make every effort to reduce these feelings of discomfort or uncertainty. There is always something positive to be gained from experiences such as these. One clear example of this is that you will be reminded of your own experiences when everything was new to you and, therefore, the discomfort felt by students when they commence OJT. In other words, you will learn to empathise with your student.

Enjoy the process and hopefully you will take these learnings with you into your coaching in the future.



TRAINING PROGRAMME FOR THE OJTI
Airspace diagram for practical coaching exercises

Local Operating Procedures for the Practical Coaching Exercises

- The radio telephony identification for the sector is '**Coach Radar**'.
- Aircraft will enter the sector airspace either in level flight or climbing/descending to a level that may be considered safe at the point of entry.
- Identification of the aircraft must be established by using a primary or secondary radar identification procedure. *Automatic correlation is not considered suitable for the purposes of the exercises.*
- After completing the identification procedure, the radar controller will assume navigational responsibility for the aircraft until it leaves the sector airspace.

Note: There is no navigational facility incorporated in the software.

- The aircraft should be *vectored* to the exit point by the shortest possible route unless additional routing is required to enable the aircraft to achieve the requested exit level.

Note: All aircraft performances such as climb/descent or turn rates are pre-set and cannot be altered by the pilot.

- The requested flight levels will be displayed in the end box of the associated flight progress strip.
- Aircraft must exit the sector airspace at the requested flight level and the radar controller may carry out no re-co-ordination.
- Although aircraft may be *turned* for identification purposes and therefore routing *before* the first waypoint, *no climb/descent clearance may be issued until the aircraft has passed over or abeam of the first waypoint.*
- A vertical separation of 1000 ft or 2000 ft or a minimum radar separation of 5 nm must be respected at all times and the Radar Position Indicators (RPIs) must not touch the airspace boundaries, including those of the danger areas.

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TRAINING PROGRAMME FOR THE OJTI (Exercises 1, 2 and 3)

Objectives for the Role Playing OJTI

The course participant will be able to:

- apply the techniques of **Demonstration and Talk Through** as explained in the theoretical section so entitled.

Note: The role playing OJTI is not required during this exercise to carry out a briefing, intervene neither in the student's work nor to give a subsequent debriefing.

Objectives for the Role Playing Student

Under light traffic conditions the student will be able to provide an area radar service and in so doing shall:

- correctly identify aircraft using an appropriate radar identification method;
- issue accurate and appropriate vectoring instructions to aircraft under his control and, using the correct phraseology, inform aircraft when radar vectoring has been terminated;
- recognise promptly when two or more flights are in potential conflict and apply standard radar or vertical separation in order to prevent potential conflicts.

The student will also use standard RTF phraseology as applied to Area Radar Control in a clear and unambiguous manner. In this context he must demonstrate the ability to:

- formulate and issue clear instructions as necessary;
- obtain and verify acknowledgements when required;
- transfer the aircraft to the adjacent sector in accordance with agreed procedures.

Additionally, the student will be able to maintain and update flight data information in accordance with agreed procedures so that the flight progress strips reflect the actual situation correctly and at all times. The student should therefore demonstrate the ability to:

- ensure that heading and flight level data is correctly amended as soon as possible;

- use pilot's reports and radar data to update the flight progress strips;
- use standard symbols and update the strip in a neat and legible manner.

TRAINING PROGRAMME FOR THE OJTI - PRACTICAL COACHING EXERCISE ASSESSMENT

Name: Instructor: Exercise: Date:.....

Overall assessment

Preparation

Establish contact and exchange names.

Establish student's background and previous experience.

Ascertain current level of ability.

Determine previous training difficulties.

I	S

Remarks

Briefing

Put the student at ease.

Establish main training session aim(s).

State standards of performance expected.

Explain working conditions.

Detail operating procedures.

Outline and discuss previous weaknesses.

Invite student to ask questions.

I	S

<p>Remarks</p>

Demonstration

Give clear explanations.

Demonstrate clearly and thoroughly.

Make student feel involved in demonstration.

I	S

<p>Remarks</p>

Talk Through

Retain control at all times.

Encourage student to discuss important points.

Identify failure in understanding.

Give extra guidance when needed.

I	S

<p>Remarks</p>

Monitoring

Provide support when needed.

Continuously monitor the student's performance.

Avoid overloading the student.

Correctly retake control when necessary.

Ensure that the student learned from these situations.

Listen and then react.

I	S

<p>Remarks</p>

Questioning Techniques

- Phrase probing questions correctly.
- Apply good questioning technique.
- Ask questions in time.

I	S

Remarks

Correcting Mistakes (Intervention)

- Prevent dangerous errors.
- Correct bad habits.
- Allow the effect of certain errors to emerge.
- Place less emphasis on errors due to lack of experience.
- When correcting errors be positive and constructive.

I	S

Remarks

Debriefing

Allow student to recover.

Ask student his opinion of the training session.

Identify the student's strengths.

Identify and deal with student's weaknesses.

Listen before giving criticism.

Summarise.

I	S

Remarks

Attitude

Establish rapport with the student.

Be calm, friendly and professional.

Give adequate recognition.

I	S

Remarks

Report Writing

Write report clearly.

Be succinct.

Cover all relevant facts.

Be accurate.

Avoid opinion unless asked.

I	S

Remarks**Definitions**

S – Satisfactory Participant has achieved the requirements of this exercise.

I – Insufficient Not yet at an acceptable standard, additional development is required.

TRAINING PROGRAMME FOR THE OJTI (Exercises 4, 5 and 6)

Objectives for the Role Playing OJTI

The course participant will be able to:

- apply the techniques prescribed in the section '**Preparation and Briefing Techniques**';
- similarly apply the techniques of '**Demonstration and Talk Through**' as explained in the appropriate theoretical section.

Note: The role playing OJTI is *not* required during this exercise neither to intervene in the student's work nor to give a subsequent debriefing.

Objectives for the Role Playing Student

Under light traffic conditions the student will be able to provide an area radar service and in so doing shall:

- correctly identify aircraft using an appropriate radar identification method;
- issue accurate and appropriate vectoring instructions to aircraft under his control and, using the correct phraseology, inform aircraft when radar vectoring has been terminated;
- recognise promptly when two or more flights are in potential conflict and apply standard radar or vertical separation in order to prevent potential conflicts.

The student will also use standard RTF phraseology as applied to Area Radar Control in a clear and unambiguous manner. In this context he must demonstrate the ability to:

- formulate and issue clear instructions as necessary;
- obtain and verify acknowledgements when required;
- transfer the aircraft to the adjacent sector in accordance with agreed procedures.

Additionally, the student will be able to maintain and update flight data information in accordance with agreed procedures so that the flight progress strips reflect the actual situation correctly and at all times. The student should therefore demonstrate the ability to:

- ensure that heading and flight level data is correctly amended as soon as possible;
- use pilot's reports and radar data to update the flight progress strips;
- use standard symbols and update the strip in a neat and legible manner.

TRAINING PROGRAMME FOR THE OJTI - PRACTICAL COACHING EXERCISE ASSESSMENT

Name: Instructor: Exercise: Date:.....

Overall assessment

Preparation

Establish contact and exchange names.

Establish student's background and previous experience.

Ascertain current level of ability.

Determine previous training difficulties.

I	S

Remarks

Briefing

- Put the student at ease.
- Establish main training session aim(s).
- State standards of performance expected.
- Explain working conditions.
- Detail operating procedures.
- Outline and discuss previous weaknesses.
- Invite student to ask questions.

I	S

Remarks

Demonstration

- Give clear explanations.
- Demonstrate clearly and thoroughly.
- Make student feel involved in demonstration.

I	S

Remarks

Talk Through

Retain control at all times.

Encourage student to discuss important points.

Identify failure in understanding.

Give extra guidance when needed.

I	S

Remarks

Monitoring

Provide support when needed.

Continuously monitor the student's performance.

Avoid overloading the student.

Correctly retake control when necessary.

Ensure that the student learned from these situations.

Listen and then react.

I	S

Remarks

Questioning Techniques

Phrase probing questions correctly.

Apply good questioning technique.

Ask questions in time.

I	S

Remarks

Correcting Mistakes (Intervention)

Prevent dangerous errors.

Correct bad habits.

Allow the effect of certain errors to emerge.

Place less emphasis on errors due to lack of experience.

When correcting errors be positive and constructive.

I	S

Remarks

Debriefing

Allow student to recover.

Ask student his opinion of the training session.

Identify the student's strengths.

Identify and deal with student's weaknesses.

Listen before giving criticism.

Summarise.

I	S

Remarks

Attitude

Establish rapport with the student.

Be calm, friendly and professional.

Give adequate recognition.

I	S

Remarks

Report Writing

Write report clearly.

Be succinct.

Cover all relevant facts.

Be accurate.

Avoid opinion unless asked.

I	S

Remarks**Definitions**

S – Satisfactory Participant has achieved the requirements of this exercise.

I – Insufficient Not yet at an acceptable standard, additional development is required.

TRAINING PROGRAMME FOR THE OJTI (Exercises 7, 8 and 9)

Objectives for the Role Playing OJTI

The course participant will be able to:

- ***monitor the student's working methods and apply***, if considered necessary, ***appropriate and timely intervention techniques*** as explained in the section entitled 'Monitoring the Student's Thought Processes and Working Methods et Practices';
- similarly apply the techniques prescribed in the section '***Preparation and Briefing Techniques***'.

Note: The role playing OJTI is ***not*** required during this exercise to carry out a demonstration or talk through, ***neither*** will he be asked to give a subsequent debriefing.

Objectives for the Role Playing Student

Under medium traffic conditions the student will be able to provide an area radar service and in so doing shall:

- correctly identify aircraft using an appropriate radar identification method;
- issue accurate and appropriate vectoring instructions to aircraft under his control and, using the correct phraseology, inform aircraft when radar vectoring has been terminated;
- recognise promptly when two or more flights are in potential conflict and apply standard radar or vertical separation in order to prevent potential conflicts;
- give appropriate climb or descent clearance as expeditiously as possible.

The student will also use standard RTF phraseology as applied to Area Radar Control in a clear and unambiguous manner. In this context he must demonstrate the ability to:

- formulate and issue clear instructions as necessary;
- obtain and verify acknowledgements when required;
- transfer the aircraft to the adjacent sector in accordance with agreed procedures.

Additionally, the student will be able to maintain and update flight data information in accordance with agreed procedures so that the flight progress

strips reflect the actual situation correctly and at all times. The student should therefore demonstrate the ability to:

- ensure that heading and flight level data is correctly amended as soon as possible;
- use pilot's reports and radar data to update the flight progress strips;
- use standard symbols and update the strip in a neat and legible manner.

**TRAINING PROGRAMME FOR THE OJTI - PRACTICAL COACHING
EXERCISE ASSESSMENT**

Name: Instructor: Exercise: Date:.....

<p>Overall assessment</p>

Preparation

Establish contact and exchange names.

Establish student's background and previous experience.

Ascertain current level of ability.

Determine previous training difficulties.

I	S

<p>Remarks</p>

Briefing

- Put the student at ease.
- Establish main training session aim(s).
- State standards of performance expected.
- Explain working conditions.
- Detail operating procedures.
- Outline and discuss previous weaknesses.
- Invite student to ask questions.

I	S

Remarks

Demonstration

- Give clear explanations.
- Demonstrate clearly and thoroughly.
- Make student feel involved in demonstration.

I	S

Remarks

Talk Through

Retain control at all times.

Encourage student to discuss important points.

Identify failure in understanding.

Give extra guidance when needed.

I	S

Remarks

Monitoring

Provide support when needed.

Continuously monitor the student's performance.

Avoid overloading the student.

Correctly retake control when necessary.

Ensure that the student learned from these situations.

Listen and then react.

I	S

Remarks

Questioning Techniques

- Phrase probing questions correctly.
- Apply good questioning technique.
- Ask questions in time.

I	S

<p>Remarks</p>

Correcting Mistakes (Intervention)

- Prevent dangerous errors.
- Correct bad habits.
- Allow the effect of certain errors to emerge.
- Place less emphasis on errors due to lack of experience.
- When correcting errors be positive and constructive.

I	S

<p>Remarks</p>

Debriefing

Allow student to recover.

Ask student his opinion of the training session.

Identify the student's strengths.

Identify and deal with student's weaknesses.

Listen before giving criticism.

Summarise.

I	S

Remarks

Attitude

Establish rapport with the student.

Be calm, friendly and professional.

Give adequate recognition.

I	S

Remarks

Report Writing

Write report clearly.

Be succinct.

Cover all relevant facts.

Be accurate.

Avoid opinion unless asked.

I	S

Remarks**Definitions****S - Satisfactory**

Participant has achieved the requirements of this exercise.

I - Insufficient

Not yet at an acceptable standard, additional development is required.

TRAINING PROGRAMME FOR THE OJTI (Exercises 10, 11 and 12)

Objectives for the Role Playing OJTI

The course participant will be able to:

- ***give a formative verbal debriefing*** applying the principles described in the section 'Giving Feedback and Student Debriefing Techniques';
- ***monitor the student's working methods and apply***, if considered necessary, ***appropriate and timely intervention techniques*** as explained in the section entitled 'Monitoring the Student's Thought Processes and Working Methods and Practices';
- similarly apply the techniques prescribed in the section '**Preparation and Briefing Techniques**'.

Note: The role playing OJTI will ***not*** be required during this exercise to give a demonstration or talk through.

Objectives for the Role Playing Student

Under medium traffic conditions the student will be able to provide an area radar service and in so doing shall:

- correctly identify aircraft using an appropriate radar identification method;
- issue accurate and appropriate vectoring instructions to aircraft under his control and, using the correct phraseology, inform aircraft when radar vectoring has been terminated;
- recognise promptly when two or more flights are in potential conflict and apply standard radar or vertical separation in order to prevent potential conflicts;
- give appropriate climb or descent clearance as expeditiously as possible.

The student will also use standard RTF phraseology as applied to Area Radar Control in a clear and unambiguous manner. In this context he must demonstrate the ability to:

- formulate and issue clear instructions as necessary;
- obtain and verify acknowledgements when required;
- transfer the aircraft to the adjacent sector in accordance with agreed procedures.

Additionally, the student will be able to maintain and update flight data information in accordance with agreed procedures so that the flight progress strips reflect the actual situation correctly and at all times. The student should therefore demonstrate the ability to:

- ensure that heading and flight level data is correctly amended as soon as possible;
- use pilot's reports and radar data to update the flight progress strips;
- use standard symbols and update the strip in a neat and legible manner.

TRAINING PROGRAMME FOR THE OJTI - PRACTICAL COACHING EXERCISE ASSESSMENT

Name: Instructor: Exercise: Date:.....

Overall assessment

Preparation

Establish contact and exchange names.

Establish student's background and previous experience.

Ascertain current level of ability.

Determine previous training difficulties.

I	S

Remarks

Briefing

- Put the student at ease.
- Establish main training session aim(s).
- State standards of performance expected.
- Explain working conditions.
- Detail operating procedures.
- Outline and discuss previous weaknesses.
- Invite student to ask questions.

I	S

Remarks

Demonstration

- Give clear explanations.
- Demonstrate clearly and thoroughly.
- Make student feel involved in demonstration.

I	S

Remarks

Talk Through

Retain control at all times.

Encourage student to discuss important points.

Identify failure in understanding.

Give extra guidance when needed.

I	S

<p>Remarks</p>

Monitoring

Provide support when needed.

Continuously monitor the student's performance.

Avoid overloading the student.

Correctly retake control when necessary.

Ensure that the student learned from these situations.

Listen and then react.

I	S

<p>Remarks</p>

Questioning Techniques

- Phrase probing questions correctly.
- Apply good questioning technique.
- Ask questions in time.

I	S

Remarks

Correcting Mistakes (Intervention)

- Prevent dangerous errors.
- Correct bad habits.
- Allow the effect of certain errors to emerge.
- Place less emphasis on errors due to lack of experience.
- When correcting errors be positive and constructive.

I	S

Remarks

Debriefing

Allow student to recover.

Ask student his opinion of the training session.

Identify the student's strengths.

Identify and deal with student's weaknesses.

Listen before giving criticism.

Summarise.

I	S

Remarks

Attitude

Establish rapport with the student.

Be calm, friendly and professional.

Give adequate recognition.

I	S

Remarks

Report Writing

Write report clearly.

Be succinct.

Cover all relevant facts.

Be accurate.

Avoid opinion unless asked.

I	S

Remarks**Definitions**

Satisfactory Participant has achieved the requirements of this exercise.

Insufficient Not yet at an acceptable standard, additional development is required.

TRAINING PROGRAMME FOR THE OJTI - (Exercises 13, 14 and 15)

Objectives for the Role Playing OJTI

The course participant will be able to:

- **summarise the debriefing in writing** and in doing so, apply the techniques outlined in the section 'Summative Assessment and Writing the Report';
- **give a formative verbal debriefing** applying the principles described in the section 'Giving Feedback and Student Debriefing Techniques';
- **monitor the student's working methods and apply**, if considered necessary, **appropriate and timely intervention techniques** as explained in the section entitled 'Monitoring the Student's Thought Processes and Working Methods and Practices';
- similarly apply the techniques prescribed in the section '**Preparation and Briefing Techniques**'.

Note: The role playing OJTI will not be asked to carry out a demonstration or talk through during this exercise.

Objectives for the Role Playing Student

Under medium to high traffic conditions the student will be able to provide an area radar service and in so doing shall:

- correctly identify aircraft using an appropriate radar identification method;
- issue accurate and appropriate vectoring instructions to aircraft under his control and, using the correct phraseology, inform aircraft when radar vectoring has been terminated;
- recognise promptly when two or more flights are in potential conflict and apply standard radar or vertical separation in order to prevent potential conflicts;
- give appropriate climb or descent clearance as expeditiously as possible.

The student will also use standard RTF phraseology as applied to Area Radar Control in a clear and unambiguous manner. In this context he must demonstrate the ability to:

- formulate and issue clear instructions as necessary;

- obtain and verify acknowledgements when required;
- transfer the aircraft to the adjacent sector in accordance with agreed procedures.

Additionally, the student will be able to maintain and update flight data information in accordance with agreed procedures so that the flight progress strips reflect the actual situation correctly and at all times. The student should therefore demonstrate the ability to:

- ensure that heading and flight level data is correctly amended as soon as possible;
- use pilot's reports and radar data to update the flight progress strips;
- use standard symbols and update the strip in a neat and legible manner.

TRAINING PROGRAMME FOR THE OJTI - PRACTICAL COACHING EXERCISE ASSESSMENT

Name: Instructor: Exercise: Date:.....

Overall assessment

Preparation

Establish contact and exchange names.

Establish student's background and previous experience.

Ascertain current level of ability.

Determine previous training difficulties.

I	S

Remarks

Briefing

- Put the student at ease.
- Establish main training session aim(s).
- State standards of performance expected.
- Explain working conditions.
- Detail operating procedures.
- Outline and discuss previous weaknesses.
- Invite student to ask questions.

I	S

Remarks

Demonstration

- Give clear explanations.
- Demonstrate clearly and thoroughly.
- Make student feel involved in demonstration.

I	S

Remarks

Talk Through

Retain control at all times.

Encourage student to discuss important points.

Identify failure in understanding.

Give extra guidance when needed.

I	S

<p>Remarks</p>

Monitoring

Provide support when needed.

Continuously monitor the student's performance.

Avoid overloading the student.

Correctly retake control when necessary.

Ensure that the student learned from these situations.

Listen and then react.

I	S

<p>Remarks</p>

Questioning Techniques

- Phrase probing questions correctly.
- Apply good questioning technique.
- Ask questions in time.

I	S

Remarks

Correcting Mistakes (Intervention)

- Prevent dangerous errors.
- Correct bad habits.
- Allow the effect of certain errors to emerge.
- Place less emphasis on errors due to lack of experience.
- When correcting errors be positive and constructive.

I	S

Remarks

Debriefing

Allow student to recover.

Ask student his opinion of the training session.

Identify the student's strengths.

Identify and deal with student's weaknesses.

Listen before giving criticism.

Summarise.

I	S

Remarks

Attitude

Establish rapport with the student.

Be calm, friendly and professional.

Give adequate recognition.

I	S

Remarks

Report Writing

Write report clearly.

Be succinct.

Cover all relevant facts.

Be accurate.

Avoid opinion unless asked.

I	S

RemarksDefinitions

S – Satisfactory Participant has achieved the requirements of this exercise.

I – Insufficient Not yet at an acceptable standard, additional development is required.

TRAINING PROGRAMME FOR THE OJTI - (Exercises 16, 17 and 18) Consolidation Exercises

Objectives for the Role Playing OJTI

The course participant will be able to:

- apply the techniques prescribed in the section '**Preparation and Briefing Techniques**';
- show the **demonstration and talk through** techniques as explained in the section so entitled;
- **monitor the student's working methods and apply**, if considered necessary, **appropriate and timely intervention techniques** as explained in the section entitled 'Monitoring the Student's Thought Processes and Working Methods and Practices';
- **give a formative verbal debriefing** applying the principles described in the section 'Giving Feedback and Student Debriefing Techniques';
- **summarise the debriefing in writing** and in doing so, apply the techniques outlined in the section 'Summative Assessment and Writing the Report'.

Objectives for the Role Playing Student

Under low to medium traffic conditions the student will be able to provide an area radar service and in so doing shall:

- correctly identify aircraft using an appropriate radar identification method;
- issue accurate and appropriate vectoring instructions to aircraft under his control and, using the correct phraseology, inform aircraft when radar vectoring has been terminated;
- radar or vertical separation in order to prevent potential conflicts;
- give appropriate climb or descent clearance as expeditiously as possible.

The student will also use standard RTF phraseology as applied to Area Radar Control in a clear and unambiguous manner. In this context he must demonstrate the ability to:

- formulate and issue clear instructions as necessary;
- obtain and verify acknowledgements when required;

- transfer the aircraft to the adjacent sector in accordance with agreed procedures.

Additionally, the student will be able to maintain and update flight data information in accordance with agreed procedures so that the flight progress strips reflect the actual situation correctly and at all times. The student should therefore demonstrate the ability to:

- ensure that heading and flight level data is correctly amended as soon as possible;
- use pilot's reports and radar data to update the flight progress strips;
- use standard symbols and update the strip in a neat and legible manner.

TRAINING PROGRAMME FOR THE OJTI - PRACTICAL COACHING EXERCISE ASSESSMENT

Name: Instructor: Exercise: Date:.....

Overall assessment

Preparation

Establish contact and exchange names.

Establish student's background and previous experience.

Ascertain current level of ability.

Determine previous training difficulties.

I	S

Remarks

Briefing

- Put the student at ease.
- Establish main training session aim(s).
- State standards of performance expected.
- Explain working conditions.
- Detail operating procedures.
- Outline and discuss previous weaknesses.
- Invite student to ask questions.

I	S

Remarks

Demonstration

- Give clear explanations.
- Demonstrate clearly and thoroughly.
- Make student feel involved in demonstration.

I	S

Remarks

Talk Through

Retain control at all times.

Encourage student to discuss important points.

Identify failure in understanding.

Give extra guidance when needed.

I	S

Remarks

Monitoring

Provide support when needed.

Continuously monitor the student's performance.

Avoid overloading the student.

Correctly retake control when necessary.

Ensure that the student learned from these situations.

Listen and then react.

I	S

Remarks

Questioning Techniques

- Phrase probing questions correctly.
- Apply good questioning technique.
- Ask questions in time.

I	S

Remarks

Correcting Mistakes (Intervention)

- Prevent dangerous errors.
- Correct bad habits.
- Allow the effect of certain errors to emerge.
- Place less emphasis on errors due to lack of experience.
- When correcting errors be positive and constructive.

I	S

Remarks

Debriefing

Allow student to recover.

Ask student his opinion of the training session.

Identify the student's strengths.

Identify and deal with student's weaknesses.

Listen before giving criticism.

Summarise.

I	S

Remarks

Attitude

Establish rapport with the student.

Be calm, friendly and professional.

Give adequate recognition.

I	S

Remarks

Report Writing

Write report clearly.

Be succinct.

Cover all relevant facts.

Be accurate.

Avoid opinion unless asked.

I	S

<p>Remarks</p>

<p><u>Definitions</u></p> <p>S – Satisfactory Participant has achieved the requirements of this exercise.</p> <p>I – Insufficient Not yet at an acceptable standard, additional development is required.</p>
--

FOCAL POINTS:	
What do I support	What concerns me

FOCAL POINTS:	
What do I support	What concerns me

FOCAL POINTS:	
What do I support	What concerns me

FOCAL POINTS:	
What do I support	What concerns me

FOCAL POINTS:	
What do I support	What concerns me

FOCAL POINTS:	
What do I support	What concerns me

ANNEX C: TRAINING PROGRAMME FOR THE OJTI - POCKET CHECKLIST

HINTS ON GIVING FEEDBACK

1. Ask yourself are you trying to be helpful – Yes? Then go ahead.
2. Give feedback when you and your student are ready to give and receive.
3. Stick to specific behaviour, be authentic and factual.
4. State the problem in terms of what the student actually did and not what he/she did not do.
5. Give feedback in small amounts.
6. Check the student has understood the content.

HINTS ON QUESTIONING

- Teaching questions encourage the student to think ahead into uncharted territory.
- Testing questions reinforce something previously learned.
- Open questions are useful as general introduction.
- Closed questions do not indicate whether or not the student is thinking along the right lines and should be avoided.
- Use probing questions which make the student think and probes his or her mental processes.
- Start with an interrogative 'What?, Why?, When?, How?, Where or Who?'

FIRST TIME STUDENT?

TRAINING SESSION STRUCTURE

1. Demonstrate and explain.
2. Student talks you through the job.
3. Student does the job him or herself.

THE DEMONSTRATION

1. Give clear explanations.
2. Demonstrate clearly and thoroughly.
3. Involve the student in the demonstration.

THE TALK THROUGH

1. Retain control at all times.
2. Discuss important points.
3. Get feedback on student's thinking processes.
4. Give additional guidance if needed.



TRAINING PROGRAMME FOR THE OJTI

POCKET CHECKLIST

PREPARE YOURSELF

1. What is to be done?
2. Who is the student?
3. Read the student's report.
4. Prepare to explain and overcome reported weaknesses.
5. Be committed to fulfilling your coaching role.

BRIEF THE STUDENT

1. Put student at ease.
2. State main session aim(s).
3. Explain the standards you expect from student.

Note: *Items 2 and 3 will be your reference for the debriefing, i.e. to what extent was the aim achieved and was the standard reached.*

4. Clarify the working (coaching) conditions.
5. Detail the operational conditions.
6. Focus on important points with particular reference to previous weaknesses.
7. Does student have any questions?

MONITOR THE STUDENT

1. Support him/her at all times.
2. Continually monitor the student.
3. Avoid overloading student.
4. Take notes in order to provide quality feedback.

USE A QUESTIONING APPROACH

1. What is he/she doing well?
2. Why is it working successfully?
3. How is it possible to build on this success?
4. What is going wrong?
5. How could this have been avoided?
6. What should be done in future so that these mistakes are not repeated?

CORRECT ERRORS

1. Retake control if necessary taking into account the following:
 - a. Prevent dangerous errors;
 - b. Correct immediately bad habits;
 - c. Allow certain (non-safety-related) errors to 'run their course';
 - d. Do not emphasise errors arising due to lack of experience;
2. Be positive and constructive.

DEBRIEF THE STUDENT

1. Set the student at ease.
2. Always ask student for his/her opinion (this is your starting point for the following discussion).
3. Discuss main strengths.
4. Discuss other strengths.
5. Discuss main weaknesses.
6. Discuss less consequential weaknesses.
7. Draw session to a conclusion by reviewing main points.
8. Agreeing on remedial actions.
9. Giving a clear overall assessment.
10. Finish in a positive and encouraging way.

Note: *Criticise only after listening to the student. Highlight problems in real terms.*

WRITE YOUR REPORT

1. Distinguish between fact and opinion. Stick to the facts unless asked for opinion.
2. Be clear, make your report easily understood.
3. Be concise, avoid unnecessary words.
4. Be complete, include all necessary details.
5. Be accurate, be factual and correct in your assessment.

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ABBREVIATIONS & ACRONYMS

For the purposes of this document, the following abbreviations and acronyms shall apply:

ATAA	Air Traffic and Airport Administration (<i>Hungary</i>)
ATC	Air Traffic Control (<i>ICAO</i>)
ATCS	Air Traffic Control Services
ATS	Air Traffic Services (<i>ICAO</i>)
CAA	Civil Aviation Administration/Authority
CBT	Computer-Based Training
CMTMP	Common Medium-Term Plan
DCM	Document Configuration Management(<i>EATCHIP/EATMP</i>)
DEL	Deliverable(<i>EATCHIP/EATMP</i>)
DFS	Deutsche Flugsicherung (<i>Germany</i>)
DIS	Directorate Infrastructure, ATC, Systems & Support (<i>EATMP</i>)
DNA	Direction de la navigation aérienne (<i>France</i>)
EATCHIP	European Air Traffic Control Harmonisation and Integration Programme (<i>now EATMP</i>)
EATMP	European Air Traffic Management Programme (<i>formerly EATCHIP</i>)
ECAC	European Civil Aviation Conference
ET	Executive Task (<i>EATCHIP/EATMP</i>)
EUROCONTROL	European Organisation for the Safety of Air Navigation
EWPD	EATCHIP/EATMP Work Programme Document
GUI	Guidelines (<i>EATCHIP/EATMP</i>)
HRT	Human Resources Team (<i>EATCHIP/EATMP</i>)
HUM	Human Resources (Domain/Unit) (<i>EATCHIP/EATMP</i>)

IAA	Irish Aviation Authority (<i>Ireland</i>)
IANS	(EUROCONTROL) Institute of Air Navigation Services
ICAO	International Civil Aviation Organization
LVB	Luchtverkeersbeveiliging (<i>The Netherlands</i>)
MUAC	Maastricht (EUROCONTROL) Upper Area Control Centre
NATS	National Air Traffic Services (<i>UK</i>)
OJT	On-the-Job Training
OJTI	On-the-Job Training Instructor
PHARE	Poland-Hungary: Aid for Restructuring the Economy
REP	Report (<i>EATCHIP/EATMP</i>)
RPIs	Radar Position Indicators
R/T	Radio Telephony
RTF	Radio Telephony (<i>ICAO</i>)
SDE	Senior Director EATMP
ST	Specialist Task (<i>EATCHIP/EATMP</i>)
TDH Unit	Training Development and Harmonisation Unit (<i>EUROCONTROL IANS</i>)
TOR	Terms Of Reference
TSG	Training Sub-Group (<i>EATCHIP/EATMP, HRT</i>)
WGTS	Working Group of Training Specialists (<i>EUROCONTROL</i>)
WP	Work Package (<i>EATCHIP/EATMP</i>)

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