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Guidelines for Personal and Career Development Processes

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Abstract

This document intends to give guidance to managers, manpower planners and staff on the processes involved in Personal and Career Development (PCD) of Air Traffic Controllers (ATCOs).

It also provides a framework for understanding of PCD as a strategic activity in Human Resources Management (HRM) and outlines the constraints which exist in Air Traffic Services (ATS) organisations to implement and maintain a PCD process.

Keywords

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Career path	Career structure	Personal development	Technical staff

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EXECUTIVE SUMMARY

This document is part of the work done under Specialist Task (ST) HUM.ET1.ST03 of the European Air Traffic Control Harmonisation and Integration Programme (EATCHIP), the predecessor of the European Air Traffic Management Programme (EATMP).

This ST is concerned with Planning and Development Programmes for Air Traffic Services (ATS) Staff. As part of the Prerequisite Deliverables for the Convergence and Implementation Programme (CIP) Objective 6.4.2, 'Application of Guidelines for Development and Implementation of a Human Resources Development Programme' a first document was released under EATCHIP (1998a) with the title 'Personnel Development: Identification of Human Potential'. The document describes how the potential of staff for the current and some future work can be identified through performance appraisals and more exploratory methods, as for example, Assessment Centre (AC) techniques.

The current document intends to give guidance to managers, manpower planners and staff on the processes involved in Personal and Career Development (PCD) of Air Traffic Controllers (ATCOs). It also provides a framework for understanding of PCD as a strategic activity in Human Resources Management (HRM) and outlines the constraints which exist in ATS organisations to implement and maintain a PCD process.

Chapter 1, "Introduction" describes the background, purpose and scope of the document.

Chapter 2, "Overview on PCD of ATCOs" introduces the content of the subject and outlines a framework to understand what PCD is, the purpose, rationale and scope of it and the objectives which could be achieved through it.

Chapter 3, "A Process Model for Career Development" describes the phases of Human Resources Planning and PCD, their time horizons and the parameters influencing the individual-organisation process model.

Chapter 4, "Supporting Career Development Concepts" summarises some of the main career development concepts and theories and areas for their application.

Chapter 5, "Main Elements of PCD" outlines the objectives of PCD systems, their main characteristics and the rules and responsibilities of the individual, the organisation and the management.

Chapter 6, "ATC Career" contains the main career advancement paths, within the operational environment, changes to managerial career, research and development and other Air Traffic Control (ATC)-related careers.

Chapter 7, "PCD Linked to Overall Manpower Planning (MP)" and provides guidance on the MP perspective related to PCD.

Chapter 8, "Summary" summarises the guidelines in an aide-mémoire format.

The Annexes contain examples of ATC career in different European States, a report on developing and implementing management competencies, and relevant policies of the International Federation of Air Traffic Controllers' Associations (IFATCA) related to PCD.

A list of references, glossary of terms used and abbreviations and acronyms are also provided.

1.   INTRODUCTION

"All that is human must retrograde
if it does not advance".
(Edward Gibbon)

Nothing endures, but change.
(Heraklit)

1.1   Background

Objective number 6.4.2 of the Convergence and Implementation Programme (CIP) of the European Air Traffic Control Harmonisation and Integration Programme (EATCHIP) Work Programme calls for an 'Application of Guidelines for Development and Implementation of a Human Resources Development Programme'.

This document is part of the work in Specialist Task (ST) HUM.ET1.ST03 which is concerned with 'Planning and Development Programmes for Air Traffic Services (ATS) Staff' and aims *inter alia* at providing guidelines and concepts which help to develop approaches to Personal and Career Development (PCD).

1.2   Purpose

This document is based on the assumption, that Human Resources Management (HRM) strategies aim at achieving the objectives set in business strategies by analysing the organisation's Human Resource (HR) needs under changing conditions and developing the activities which are necessary to satisfy these needs.

The document aims to

- Give guidance to management and staff on the processes involved in PCD;

- Provide a structure and an approach to PCD reflecting both perspectives, the organisational / planning perspective, and a personal perspective in generic terms and concepts;

- Provide a framework for PCD planning which can be implemented in wider Manpower Planning (MP);

- Provide a basis for discussion and common understanding of the issues which are related to PCD for staff and managers.

The document does not provide PCD training guidelines or methods which could be considered in training. This work is part of, for example, continuation

training development for other jobs related or associated with Air Traffic Control (ATC).

Neither does the document prescribe or impose any 'best' method or tool to be applied in PCD. A 'best' method simply does not exist and it will be difficult to draw a profile of the effects of different methods which exist.

In fact, the view in this document is that the choice of the method will widely depend on local culture, the options which are available and applicable and on staff and management preferences to name but a few.

The document should thus be used as one reference in discussing and developing a PCD scheme and a process.

1.3   Scope

The scope of the document will cover the organisational and business requirements for PCD and the structure and the processes in PCD together with links to other HRM and HR planning activities. The main elements of PCD including objectives, the responsibilities for the organisation, management and staff are clearly outlined and described.

The document also describes the constraints and difficulties which exist especially in Air Traffic Controller (ATCO) PCD and outlines and discusses possible approaches to overcome some of them.

With regard to the personal side in PCD, the document provides some psychological concepts which are supported by clear evidence in practice. This concerns e.g. supporting theory and concepts which are applicable in PCD and help to better understand the personal issues and create higher awareness for them in PCD. PCD is rarely brought in line with psychological or pedagogical considerations, but it is felt that this could help managers and staff to better understand and approach career development issues.

Finally, the document describes and provides guidance on the MP perspective related to PCD.

The Guidelines and suggestions for a personal and career development process in this document do not apply to, nor aim to interfere with, the appropriate training, the duties and tasks which are subject to and are regulated under licensing agreements for ATCOs. Any such training will be developed and provided according to the rules and regulations established by the appropriate authorities.

Only a short reference to PCD for technical and maintenance staff is made in this document. Further work will be carried out in European Air Traffic Management Programme (EATMP) in the near future.

1.4   Benefits

This document highlights the benefits of properly addressing PCD issues for controllers. It outlines the PCD processes and provides guidance how an Air Traffic Management Organisation (ATMO) can maintain and develop its most valuable resource - the human one in ATS.

A PCD enables in particular to offer staff members with high potential the opportunity and incentive to remain and advance within the organisation. It also allows other staff the chance to improve their skills and thereby flexibility for the organisation.

A well-conducted PCD programme can result in increased staff satisfaction, motivation and loyalty. Improved confidence in skills also offers employees broader employability perspectives.

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2. OVERVIEW ON PERSONAL AND CAREER DEVELOPMENT (PCD) OF ATCOS

An ATS organisation's success is linked to the skill, knowledge and commitment of its staff and their potential for learning in a constantly changing technological ATC environment with increasing complexity and dynamics.

One of the organisational ways to cope with these challenges is to be engaged in staff development and in particular career development plans. One of the key activities is to identify the potential of staff for further development (see EATCHIP, 1998a).

Controllers and their representative bodies are also interested in staff development issues. For example, the International Federation of Air Traffic Controllers' Associations (IFATCA) mission statement says that one of the federation objectives is "to promote and uphold a high standard of knowledge and professional efficiency among ATCOs".

2.1 Main Challenge

Traditionally, PCD is considered to be best accomplished by rotating employees through as many as possible key jobs throughout their career to further develop their skills. This approach is difficult in ATC due to the need to maintain a valid licence.

It should be borne in mind first that the 'life cycle' of a career as an operational controller will in most instances be shorter than the total working time until regular retirement.

After a certain number of years in serving at the control room, many ATCOs move (part-time or full-time) to other jobs within ATC or to administrative or managerial jobs in the organisation.

Therefore, two main challenges exist in ATMOs with regard to controllers:

- career change to another ATC job (continuation);

- career change to another job outside of ATC (transition).

Whereas the move to an ATC-related career e.g. in training or certification is considered as relatively seamless (where pedagogical background exists), the transition to other jobs outside ATC, if carried out without preparation and / or proper training, may impose difficulties. A cultural barrier between the Operations (OPS) and the 'other side of the corridor' is not untypical.

PCD can be available to meet the organisation and the individual needs. Individuals should be encouraged to take responsibility for their own PCD. However, as a rule of thumb these needs could be prioritised to be met on the

basis of 80/20 where the responsibilities would also be shared accordingly. For example, the organisation will be more responsible for the development of skills related to its needs, whereas the individuals will be more responsible for their own needs.

2.2 Purpose of PCD

ATMOs are increasingly driven towards changing corporate environments (e.g. privatisation). Organisational and technological changes require different key competencies in ATC and especially in management, which need to be developed or bought (from external resources).

2.2.1 Organisational Needs

PCD should first and foremost be viewed from organisational focus, i.e. the positions, which lead into certain career paths which represent areas of skills that are required in an organisation. Organisations do not embark on PCD of their staff unless they see a clear need and expect benefits from doing it.

With increasing pressures due to globalisation, cost-efficiency and complexity and dynamics in Air Traffic Management (ATM) business and operations other areas e.g. in marketing, consulting, strategic management, strategic planning, international contacts etc. are of growing importance. The need to have competent staff from within the organisation is thus increasing.

Some of the core competencies required for other jobs are normally available in ATMOs. Others (e.g. customer relations, budget development) need to be developed.

2.2.2 Personal Needs

PCD should also be viewed from a personal point of view i.e. the way staff perceive their careers. ATC is a well-established occupation with high and specific demands on staff in training and day-to-day work. The profession thus clearly offers a career in itself (see Chapter 6) and develops the knowledge and skills of its incumbents. PCD is thus always happening.

Part of personal values, attitudes etc. is a product of the work which people do. During training and later in their careers ATCOs adapt to the job roles and develop specific values and attitudes which form part of the profession.

Changing circumstances in personal life, job or organisational changes etc. can create further development and career needs in people making them additional drivers for PCD in organisations.

2.3 Definition, Rationale and Objectives of PCD

2.3.1 PCD Definition

PCD is the systematically planned, designed, implemented and controlled identification and promotion of abilities, skills, attitudes and knowledge of employees in line with the individuals' expectations and needs whilst taking account of changes in jobs and tasks.

Different terms are used in the context of career, e.g. career development, career planning or career management (see Glossary). Leibowitz (1987) described the characteristics of a 'career development system' as an ongoing, organised, planned effort which attempts to achieve a balance between individual needs and organisational requirements. This system is linked to other HRM structures and practices (e.g. performance appraisal, promotion and reward systems, Succession Planning (SP), training and development).

2.3.2 Rationale of PCD

The above definitions stress that future MP requirement in terms of quantity (number) and quality (skills, qualification) should be balanced with individual needs of personnel in order to be effective.

The definition is based on the central objective of HRM in ATMOs and of PCD in particular to enhance the capability of the organisations to gain competitive advantages and better performance. It is assumed that investment in HRM and particularly in

- planning of HR needs in the future (e.g. long-term MP);
- selection, training and development of HR

is beneficial for personnel and for the organisation.

There is growing evidence that investments in HRM in general and in staff development in particular do pay off (see Koch and McGrath, 1995) and lead to better performance of organisations (Huselid, 1995).

Guideline 1

PCD should be done in parallel with changes which the organisation pursues in its strategy and should be balanced against the needs and abilities / skills possess by its staff.

2.3.3 Objectives of PCD

The overall objective of PCD is to ensure that the business needs of the ATMO with regard to future requirements in different jobs of the organisation are met. To this effect an appropriate number of qualified persons from within the organisation should be available for filling open vacancies which require extensive experience and knowledge.

The wider objectives of PCD comprise the need to

- meet the personal development needs of individuals;

- build on and secure current qualifications of staff;

- enhance employability of staff;

- create a sense of responsibility in individuals for their own development and careers;

- secure staff requirements in other jobs;

- augment understanding and motivation of staff to accept and foster change;

- adapt qualification to new / changed tasks / jobs;

- prepare people for jobs outside the Operational Room (OPSroom) and for responsibilities;

- create / develop leaders and managers from within the organisation;

- increase, recognise and appreciate the performance and productivity of people.

2.4   Scope of PCD

PCD is part of the strategic HRM processes of personnel development and long-term MP in line with business strategy.

In line with the foregoing, PCD should be oriented towards the

- future business needs and
- potential / motivation / capability and needs of individuals.

The latter will vary due to:

- age,
- personal situation of the individual e.g. family, health state;
- qualifications held and the abilities and skills the individual possesses;
- range of past and current work experience;
- personal competencies;
- career and development possibilities, which are available to the individual.

Thus, PCD is not just selecting and training of staff for further development but an undertaking that is geared towards current organisational and business needs and the current personal needs, opportunities and qualities of the individual.

3.   A PROCESS MODEL FOR CAREER DEVELOPMENT

3.1   Time Horizons

Jackson and Schuler (1990) described three different time horizons in which HR planning in general acts:

- short-term (up to one year);

- intermediate term (two-three years) e.g. in readjusting employees' skills, attitudes and behaviour to fit changes in the business needs;

- long-term (more than three years).

The three time horizons correspond to business planning (where they exist). It enables dynamic linkages among components of a fully integrated system of business and HR planning.

3.2   Phases of HR Planning and PCD

In each time horizon there are five similar phases of HR planning:

1. gathering and analysing data (e.g. on environmental forces such as globalisation, new technologies, changing workforce, changing demographics, changing work values, competitive strategies, life cycle stage and industry sector) to assess HR demand and supply;

2. identifying the gap between HR demand and supply;

3. developing HR objectives;

4. designing and implementing programs which will enable the achievement of the HR objectives (e.g. program for counselling employees and teaching them career planning skills, of identifying transfer and reassignment possibilities within the organisation, interpersonal skills, assessment of core competencies, adaptation skills, the appropriate skills to work in a culturally diverse and supranational organisation);

5. monitoring and evaluating these programs in a systematic manner.

The application of such a model provides HR planners with information about how employees are likely to progress their career through the organisation. This information can lead to developing PCD programs.

For example, based on forecast business needs, HR planning will encourage employees to develop administrative skills, willingness to assume responsibility for outcomes, flexibility, coping with ambiguity, creativity, effective decision-making etc.

Figure 1 presents an integrated career development process model. The model serves here as a general conceptual framework for the individual-organisation parameters. Some of the influencing factors outlined in this process model and their relation to career development will be described in detail in the document. The assumption is that the team leader-ATCO discussion should play a big part in the career development process and is influenced by individual, situational and organisational factors.

Individual key variables may include genetic features, childhood learning experiences, psychological concepts (e.g. the role that identification with important adult models plays in career aspirations). It will include also family patterns and constraints, personal values and personal needs, job satisfaction and motivation, personality but also the self concept, vocational maturity, age level, self-evaluation / assessment, occupational and personal interests, perceived occupational stereotypes, reality check skills and other individual parameters.

Organisational programs may include strategic planning, performance appraisal procedures, individual counselling, early retirement, training and development, succession plans of replacing managers and other programs.

Organisational policies may include policies regarding promotion, rewards and effort recognition, performance - promotion relationship, job relocation, recruitment, staff reintegration and rehabilitation, training and development, internal mobility, rotation of middle level managers and other policies.

Situational determinants include, for example, available information on career, economic opportunities, job market conditions, working conditions at competitive ATMOs, available vacancies etc.
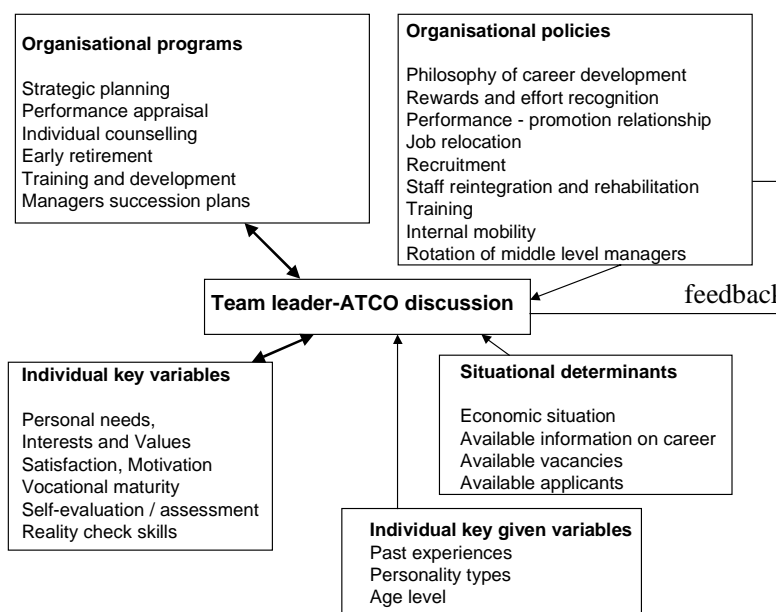

Figure 1:   An individual-organisation career development process model

3.3 PCD Stages

PCD is a process which includes the following stages

- planning of future HR needs and requirements in terms of quantity (number of vacancies) and quality (Knowledge, Skills, Abilities and Other personal requirements (KSAO));

- planning of the time (e.g. SP, training and education);

- marketing of the jobs and giving relevant information on the jobs to personnel;

- design and development of career paths that lead to different jobs;

- provide employees feedback on their abilities, possibilities and shortcomings;

- identification of staff potential for the jobs and feedback / discussion with staff on own PCD needs and plans;

- consultation and coaching / counselling and support on both group and individual level;

- planning career development training.

It is therefore clear that PCD is a strategic long-term programme.

3.3.1 Timeframe Involved

PCD is a long-term programme planning ahead > 5yrs. PCD should thus start early in the career due to the long-term perspective and in order to gain sufficient Return On Investment (ROI).

Succession Planning (SP) [1] is one form of long-term planning of PCD model as part of overall MP.

Staff from OPS are hampered in having specific careers due to staffing constraints, e.g. lack of personnel in ATC. Within MP methods and approaches need to be developed which ensure that PCD is part of the long-term planning, for example, SP, including job positions outside OPS which are open to ATCOs. Some possible careers for ATCOs require a certain experience in operations, thus causing a conflict between time left for the new job and desired early retirement.

The main structure / steps in PCD are

- identifying demand;

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[1] The key elements in SP are identifying high-potential employees, identifying needed competencies and providing learning experiences to develop these competencies (DeLuca, 1988).

- identifying potential;

- identifying means / methods of PCD.

3.3.2   PCD Planning

From the description given, it is clear that a career development system cannot be a one-time-event e.g. a one day career planning workshop, where employees come back to their work and find that there is no plan to implement the workshop's ideas or tools.

The absence of a well-planned career development system can result in problems such as, for example:

- a shrinking of middle management cadre;
- loss of high potential employees;
- uncertainty, fear and confusion among employees;
- rapidly changing work values among employees (e.g. loss of motivation or commitment to the job);
- failure to cope with future demands.

3.3.3   Dynamic Relations in PCD

PCD in many organisations is often an 'isolated' undertaking. Development training courses are offered, creating interest and a demand for it. Often the demand exceeds the expectations and restrictions have to be imposed by management, which could create frustration followed by a loss of credibility of the programme and the management.

In this context, there are two challenges:

a) not to create high expectations;

b) the need to proactively manage job opportunities.

Staff who eventually succeeded to get into development training afterwards often find themselves in the same position and cannot take advantage of their acquired skills due to a lack of open vacancies. Again, this will create frustration and loss of credibility.

On the other hand, vacancies may be difficult to fill if working conditions, salary etc. do not attract ATCOs.

Figure 2a tries to sketch some of the dynamic effects and negative feedback loops which could occur.

Figure 2a: PCD dynamics and (negative) feedback loops

Figure 2b illustrates a positive feedback:

Figure 2b: PCD dynamics and (positive) feedback

On top of this, costs will often exceed the budget set aside for PCD and cost-benefit ratio will be low. Understaffed ATC units will have either to impose restrictions or will completely disband any PCD or will otherwise be hampered in operations.

This example describes only a small part of the dynamics that can be created by any changes in HRM. It demonstrates also the disadvantages of an

isolated PCD (lack of integration with overall business needs; lack of planning of open vacancies).

<u>Figure 5 in Chapter 7</u> aims to outline a kind of 'backward' planning model e.g. SP in a more integrated approach.

It should be borne in mind that there will also be some drawbacks of this approach and frustration due to lack of opportunities cannot be avoided.

4.   SUPPORTING CAREER DEVELOPMENT CONCEPTS

Before referring to the ATC career, a brief summary of some of the main career development concepts is provided as a background to set the scene. In general, there is a range of career development concepts, from deterministic views of career, which see career development as an environmental shaping process, to more self-determined views, which see individuals as rationally shaping their optimal environment and opportunities for career development (Peterson, et al., 1991).

There is no one concept which is 'better' than the others, but rather under different conditions one concept might be more applicable or might explain more accurately a given situation than another. These concepts are considered here as a framework and prerequisite for understanding of career development issues.

4.1   Social Learning Concept

Consider the following situation: a HR manager would like to offer a controller the opportunity to become a supervisor but the individual refuses the offer and in fact prefers no career advancement at all.

The application of the Social Learning concept to (this or another) career decision means to identify and explain the personal and environmental events which shape individuals' decisions about career. The Social Learning concept focuses on the behaviour itself (e.g. which option is chosen) and less on the adjustment process (the way in which an individual adjusts to a current situation).

4.1.1   Application of Social Learning Concept to PCD

The Social Learning theory implies that employees bring a set of genetic and socially inherited attributes (e.g. gender) to their particular working environments. The attributes and environments interact to produce self-views, which influence the employee's work-related behaviours. These behaviours are shaped by and may be modified by reinforcements and punishments. This process involves environmental events which affect career decisions such as individual experience at the job market, perceived outcomes and payoffs of various career possibilities, family resources and role models (Osipow, 1983).

Examples of practical applications of the Social Learning approach to career decision-making are

- modelling, for example, minority group members can be shown successful models of individuals who are successful in order to shape a broader range of aspirations to overcome inherited attributes;

- availability of training funds which create opportunities, which in turn can moderate career choices;

- career counselling, for example, specific programs can be developed to assist employees identify particular barriers they face by virtue of their inherited attributes.

The latter methods help individuals to learn the skills needed to explore alternative careers, by defining problems and goals, identifying a variety of solutions, gathering information about the problem and examining possible outcomes of various decisions (Jones and Gelatt, 1979).

Conclusion: The Social Learning concept better explains what makes people change certain career behaviour. It does not explain the mechanisms which make them change. This is at the core of development theories or concepts.

4.2   Developmental Self-concept Theory

The hypothesis from the viewpoint of developmental theories is that behaviour is a reflection of individuals attempt to implement their self-descriptive and self-evaluative thoughts.

The implication of this theory into career development is largely related to Donald Super. He suggested that in their vocational behaviour, e.g. vocational decisions or career choice, individuals try to 'implement' their self-concept as a person. The self-concept is not a fixed entity but changes as a function of the individual's stage of life development. The 'psychology of career' rests on the assumption that career development conforms to the general principles of human development (Super, et al., 1963).

Conclusion: This concept explains, for example, why people make changes in their career: they do so to better implement a (changed) self-concept into a career e.g. a new job that better 'hosts' their self-concept. The theory supports the notion of feedback in appraisal interviews on past achievements and potential for further work (see EATCHIP, 1998a). Feedback can help to establish and / or expand a vocational self-concept and thus can form the basis for a move into a new career.

This process is described in more detail and related to the ATCO career in the following sub-chapters.

4.2.1   Job 'Culture'

A culture can be defined as "a system of beliefs, values, customs and institutions shared and transmitted by members of a particular society, from which people derive meaning for their work, love and leisure activities" (Peterson, et al., 1991).

Many observers who visited an ATC Unit have noticed the existence of a certain (local) job culture. ATCOs tend to develop behaviour appropriate to local job culture stereotypes.

For example, they might adjust their sport interests, common leisure activities and sometimes even their way of dressing. Job incumbents normally share similar views and values with regard to their job, with regard to management etc.

This 'role playing', stimulated by the process of identification with one's team and the job incumbents further facilitates the development of a stable vocational self-concept.

An adjustment to the local culture at the ATC Unit can be a determinant to success in training, at On-the-Job-Training (OJT) and later on the job and can affect any career advancement prospects for the future.

The behaviour and the related images of themselves are very powerful and should not be overlooked. They will also play a crucial role in PCD of controllers.

4.2.2 Vocational Stabilisation (Implementation)

Individuals settle within a field of work (job) and adapt to the local job culture. This is called "Vocational Stabilisation" (VS). VS is an important application of the self-concept theory. After settling in a job individuals will use their talents in such a way as to demonstrate the appropriateness of the career decision they previously made and that they were successful in implementing their self-concept into the job.

VS usually occurs approximately between the ages of 25 and 35. During VS employees might change their positions but rarely change vocation (Osipow, 1983).

If people have settled into a job, it will be difficult to change their views and attitudes, interests and values. It will also not be easy to introduce career changes.

4.2.2.1 Application of the Concept in PCD: Feedback

Attempts can be made to give self-concept relevant feedback to individuals and thus try to enhance the self-concept and self-esteem as an adjunct to improving vocational and career decision-making, such as VS.

The concept is supported by strong evidence although there has been very little effort (if any) to explore the relationships e.g. between job success expectations, the development of professional self-concept and career decisions in ATCOs.

4.2.2.2   Application of the Concept in PCD: Career Counselling

Career counselling based on this developmental approach will first identify the individual's life stage and the level of career maturity.

Early Career: Persons in the early stages of their career as a controller (aged 25-35) will concentrate on the exploration phases of developing and stabilising their VS. Career counselling will support this by providing relevant feedback on past and current achievements and support in settling into the job / team. An important development training especially in this stage could be Team Resource Management (TRM) of ATCOs since it both concentrates on the current job as a controller working in a team but creates awareness and better understanding of the wider context (safety; communication, managerial aspects etc.); (see EATCHIP, 1996a, 1996b).

Mid-term Career: Persons (35-55) who have successfully settled in the profession and have reached the 'mature' VS stage can be fostered to focus more on career advancement and on possible options available in conjunction with feedback on their potential for other jobs. This might lead towards making decisions for further career development.

Late Career: Persons (above 55) at this stage are more concerned to remain productive in their current job and maintain the expertise and the status achieved rather than prepare themselves for careers outside their current job e.g. for positions in management. PCD at this stage will focus more on the available skills, expertise and attitudes and on options for applying them in related job areas. For ATC staff the time frame starts 10 years earlier.

Applying this supporting concept means that after an identification of potential, there can be a change of self-concept as a controller and other options may come more into the forefront as being achievable and beneficial for the individual. For late-term career see Chapter 6).

Figure 3 summarises the developmental self-concept theory's parameters.


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┌─────────────────────────────────────────────┐
│         Self-Concept Development             │
│                    ↓                         │
│         Vocation (implementation)            │
│                    ↓                         │
│            Cultural Influences               │
│                    ↓                         │
│         Stabilisation of Self-Concept        │
│                    ↓                         │
│                Immobility                    │
│                    ↓                         │
│        No need to change Self-Concept        │
│                    ↓                         │
│          No change in Self-Concept           │
│                    ↓                         │
│   No other implementation in another career  │
└─────────────────────────────────────────────┘
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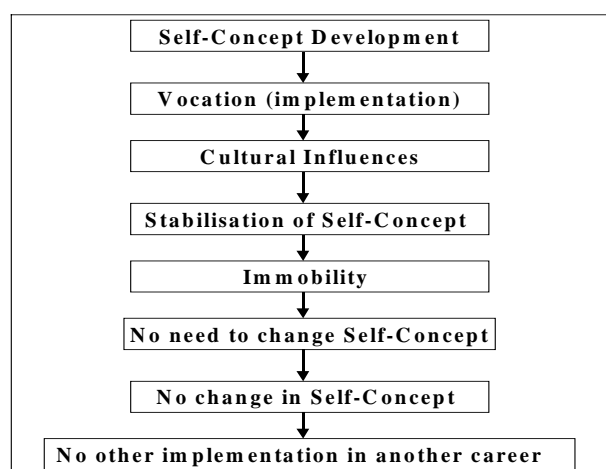
Figure 3:   Developmental self-concept in PCD

4.3   Adult Career Development Theories

Adult career development theories are interested in what happens after the first work choice was carried out. They deal specifically with mid-career and the retirement periods.

4.3.1   Mid-life Crisis and Career

Middle-age persons in their early and middle 40s often question the basis of their lives. General dissatisfaction with life and a reduction of self-esteem are not untypical. They tend to observe differences between early goals and present achievements. They have a need for affirmation of self by society through success in career.

This period is associated with questions about the meaning of life as a result of family-related factors and work-related issues such as the attainment of one's highest career position and the reaction to job threats from younger colleagues using better new techniques (Murphy and Burck, 1976).

In many professions people already between 35 and 43 raise questions about the fulfilment of what they are doing. The awareness of a disparity between one's achievements and aspirations is common in this life period. This transition and its associated stress is not necessarily negative, it can result in a re-stabilisation and even better integrated personal and job life structure than before.

The mid-life period is frequently associated with career change. It could be a horizontal change to another field, a vertical one in the same field to a level of supervisory responsibilities, or a combination of both.

4.3.2   Career Change

The motivation for a career change can be classified under two main categories of pressures:

- as **environmental pressures** e.g.
    - ➤ change in the job environment due to technical new developments which require higher performance that people cannot cope with;
    - ➤ mobility constraints for example between different Area Control Centres (ACCs);
    - ➤ occupational prestige;
    - ➤ personality clash with a supervisor;
    - ➤ reduction of working positions due to new technology or company concepts regarding social life (family, weekend work).

- and / or **self-generated pressures** e.g.
    - ➤ attempts to improve social status and income;
    - ➤ search for greater satisfaction;
    - ➤ fear of failure;
    - ➤ diminishing personal resources;

> physical effects of ageing and its consequences on air traffic safety;
> interest incongruity with occupation;
> need for self-actualisation;
> accumulation of material resources as a motive for career change.

Career change in the context of ATCOs has some additional peculiarities. The relatively low age of entry, the relatively long time required for formal training and licensing, the accompanying stress and workload on the job and the relatively early age of retirement can all move down the life-span career and the expected period of productivity. Therefore, already Super (1957) observed that occupations with early entry and early leaving tend to produce high earning.

The life cycle idea implies that following an increasing age there may also be observed an increase in environmental and self-generated pressures.

4.3.3   Learning Strategy and Behaviour Style

PCD is considered as a key factor in the success of any organisation. On a strategic level, organisations are interested in attracting, developing and committing excellent managers.

There is evidence for the fact that career success of managers could be a function of the individual's learning strategy and the organisation's structure (Hoeksema et al., 1997):

- A **deep learning strategy**, characterised by a focus on meaning and relations, fosters career success, especially in a less specialised context.

- A **surface learning strategy**, characterised by a focus on instructions and facts, was found as hampering career success, especially in a highly integrated context.

There is also a long-lasting evidence for the fact that people differ in their 'cognitive style', that is, the way they perceive situations, think, solve problems, learn and relate to others (e.g. holistic or analytic styles). Thus, people will be more satisfied and successful in careers which are more compatible with their cognitive style. An awareness of preferred learning strategies and cognitive style is useful for staff development and career guidance and in assessing staff for different career paths (Sadler-Smith, 1998).

For example, ATCOs who stay over a long period at the OPS environment will prefer an analytical style, characterised by quick solutions and sticking to rules. At a later stage of their career, they might find it difficult to adapt to a broader style. This effect should be avoided by offering regular continuation and / or advanced training programmes to the ATCOs concerned.

4.4   Career Motivation Concepts

The concept attempts to explain various career and work behaviours such as deciding to stay with an organisation, revising one's career plans, seeking training and new experiences and setting career goals (London, 1983).

The career motivation theory includes three dimensions:

1. **Career Resilience** - The ability to overcome career setbacks. This ability relates to self-efficacy, tolerance of uncertainty, risk-taking and dependency.

2. **Career Insight** - The extent to which an individual has realistic career perceptions about oneself and the organisation. Career insight is related to one's need for change, a knowledge of one's strengths and weaknesses, the goal clarity and the goal flexibility. Employees with a high level of career insight investigate potential career changes, gather information about career opportunities and identify realistic goals and action plans. Organisations can influence this by helping individuals to identify their potential for further development.

3. **Career Identity** - The extent to which career is central to one's identity. Factors reflecting career decisions and behaviours such as work involvement, job satisfaction, desire for upward mobility (i.e. need to be promoted) represent career identity (London, 1983). London and Bassman (1989) suggested that retraining mid-career workers should aim at developing new career identities. For example, implementing organisational change objectives effectively and promoting sabbatical projects are ways of expanding career identity. These could in turn reduce a desire for upward mobility, which is less likely to be feasible for the majority of staff (e.g. due to lack of posts).

In this context, it is important to note that career planning is not always synonymous with upward mobility. Only a few can make significant upward strides in the organisational pyramid. For most employees, career planning is more comparable with the notion of growth and development within their own grade (McMahon and Merman, 1987).

Career motivation research typically focused either on feelings and attitudes related to work and career or on actual behaviours. Grzeda and Prince (1997) combined both dimensions and involved individual in a career transition, as a result of an organisational downsizing. They also used additional measuring variables related to career motivation such as creativity, self-efficacy, autonomy, persistence, perseverance and managerial competence to explain career motivation. Grzeda and Prince (1997) aimed at refining existing career motivation measures and proposing a combined career motivation scale.

Noe et al. (1990) emphasised the importance of reliance on feedback for career motivation. Feedback can be provided by

- asking one's co-workers for feedback on one's performance (e.g. peer assessment), provided that they have been properly trained how to give feedback;
- discussing with one's supervisor strengths and weaknesses (e.g. performance appraisal);
- revising career goals based on new information regarding oneself or the situation (e.g. self-assessment).

4.5   Decision-Making Concepts

Decision-making concepts attempt to describe the process of making career decisions as a systematically ordered sequence of events, called a model or paradigm. These events provide models or guidelines to structure the career decision-making (Peterson, et al., 1991).

Such a rational, comprehensive process of making independent career decisions is obviously not always relevant in the case of ATCOs. The limited options available for ATCOs for career advancement within the operational environment restrict the availability of full information on all valid options for decision-making.

There are cases where a decision is taken to follow non-ATC-related personal development (e.g. different studies at universities which are not necessarily related to ATC).

4.6   Sociological Approaches

Sometimes the chance factor is important. Being at the 'right place at the right time' can occasionally be more crucial than a systematic career planning or a well carried out career counselling.

The basic idea of the Sociological Approach is that situations and elements beyond the employee's control can exert influence on the course of career. There is no complete freedom of career choice. Instead situational awareness for 'windows' of opportunities (or the lack of it) will affect career advancement.

5.   MAIN ELEMENTS OF PCD

5.1   Objectives of PCD Systems

The main objectives of PCD systems are:

- securing current qualification of staff;
- adapting qualification and increasing staff adaptability to new / changed tasks / jobs in order to better meet future changes and business needs;
- augmentation of understanding / motivation to accept and foster change;
- enhancing staff satisfaction by promoting the development of staff abilities;
- securing staff requirements in different jobs;
- increasing performance;
- preparation for jobs outside the OPSroom;
- creating / developing leaders / managers from within;
- meeting personal development needs of individuals;
- creating / allocating responsibility in individuals for own development and career (becoming responsible);
- improving organisational effectiveness by harnessing the potential of its staff;
- increasing employability within and also outside the ATMO.

5.2   Main Characteristics of a PCD System

In general successful career planning is characterised by five features (after McMahon and Merman, 1987):

- a **dialogue** between the employee and the organisation (represented by the immediate team leader, supervisor or other parties), it is an effective partnership between employees, management and the organisation in the integration of individual needs and organisational plans;

- a **guidance**, or provision of information (by the management) about options, opportunities and goals available. This information can be provided by a discussion, seminar, through coaching / counselling or informally;

- the employees' **involvement** in stating their career objectives, timetables and values. This involvement and information are necessary for optimising the trade-off between what the employee wants and what is possible;

- **feedback** advice and information on the potential for development which can assist employees in calibrating their behaviour towards the career goal. Feedback can be obtained from discussion with one's supervisor, from colleagues, or from developmental assessment centres and self-experiences; it should also be a continuous process; this can be the media to feed back on potential identification of managers and to state interests of staff members;

- mechanisms of career planning steps or paths, e.g. **career path**, or career ladder, a career followed in a regularly proceeding professional path, a steady climb up through the ladder (see Glossary). A career path is demonstrated in Figure 7 in Annex A.

The career path approach does not prepare an individual for a specific job with clearly understood content known date of availability. A career path outlines normally only the steps or routes which can be followed and thus are subject to decision taken by the organisation and / or the individual. This is different from a succession plan which gives details about the post / jobs and time-lines (at what time the job needs to be filled by the successor). Changes to the 'when' and 'what' can occur prior to the employee's arrival due to the individual's cognitive and personal growth, or reorganisation.

5.3   Methods of Addressing PCD

Periodical appraisal interviews, performance assessments provided by supervisors, peers and sometimes also by subordinates are suitable means to demonstrate and evaluate a potential for promotion or career change and discuss career development goals and opportunities (see also EATCHIP, 1998a).

Guideline 2

A policy and methods for continuous assessments on-the-job, directly related to the business objectives of the ATS organisation (e.g. experience / performance in external consultancy work, teamwork and interpersonal skills, reduced delay targets), should be adopted.

This will provide management with the information and input to consider a broad range of candidates for a different job and to give feedback to staff.

5.3.1   Career Discussion

Career planning can facilitate the individual-organisation relationship. The underlying assumption in advanced career planning approaches is that the more the individual and the organisation know about each other, the better.

Conducting an effective, developmental or career discussion between team leaders / supervisors / managers and staff is a challenge. Although the purpose of such a discussion can be to assure that skill and developmental needs are being met, it is not unusual to find such a discussion spilling over to unrelated or personal issues. In particular, **it could be difficult for team leaders to conduct an effective discussion when their own career development needs and opportunities are not clear**.

In addition many employees are unable to define their career desires or needs clearly and / or in a way, which does not conflict with the goals of the organisation.

Guideline 3

A career discussion should as far as possible be conducted in an open and honest climate where personal needs (e.g. avoidance of 'burn-out' risks), strengths, weaknesses, feelings, aspirations, current performance and potential skills can be freely addressed.

Exercising coaching skills with the aim of creating an interface between subordinate skills and competencies - and the various positions on the career path the ATS organisation (or ATMO) can offer - may not be an easy task for supervisors. Training in evaluating

- how their employees are doing in their current job;
- how to prepare a promotable pool; and
- how to prepare themselves for a supervisor-employee discussion

will be needed.

In order to better implement a changed self-concept, the developmental self-concept theory might help to understand the general situation of the employee and foster / trigger the response of employees (see Sub-chapter 4.2).

5.4   Individual and / or Organisational Responsibility for Career Development

A decision needs to be taken on who should be responsible for career development. Should it primarily be the staff who care for their personal development with the organisation only facilitating and assisting within its resource possibilities to fulfil aspirations? Or should the organisation take the ultimate responsibility and encourage individuals and / or managers to develop their staff and proactively monitor their career development?

If the organisational philosophy of career development is that it is the employees' responsibility to engage in self-assessment and reality check activities, then it should verify what is in place for them to play out that responsibility.

For example: Are there sufficient opportunities for team leader-ATCO discussion? Are means and processes available to identify the potential to coach / counsel them and / or train them?

Guideline 4

Independent of the policy or philosophy adopted for PCD, staff development should always be closely linked and aligned with the organisation's business strategy and objectives.

HRM activities, especially rewards, promotions, retirement and pension schemes, and PCD should foster and support these strategies. They should be communicated in an effective way to increase awareness and trigger the response of individuals.

5.4.1 Organisational Career Philosophy

There are different career philosophies. One can argue that advancement should be based on seniority and less related to job responsibilities (even where one might think that jobs would be handed out purely on merit). This approach guarantees upward moves, but naturally lacks flexibility and might ignore meriting and motivated high-flyers ('fast track' career moves).

A career philosophy which advocates a close link between job responsibility and career advancement will more or less ignore lower or upper age limits and seniority in considering promotions or career changes. Whilst offering a high degree of flexibility in upward and lateral moves, it could pose difficulty to ATS organisations (or ATMOs) which have to work according to strict civil service career concepts.

A HRM decision has to be taken also whether broad or narrow career paths should be established. If the paths are broader, e.g. including development of supervision skills at the OPSroom, staff will have more opportunities to acquire skills which are relevant to many other functions and to gain deeper understanding and insight, exposure and visibility within the organisation.

Although the time frame is likely to be longer for skill acquisition in broad career paths and promotions may be slower, career opportunities for staff may be wider over the long-term (Schuler and Jackson, 1987).

5.4.2 Career Considerations

There are career considerations, which need to be taken into account by both employees and organisations in considering career perspectives and possibilities, for example:

- Operational Requirements (ORs) (at current and designated job) can open career development opportunities, but also delay them, for example, until after a restructuring of the airspace has been completed. More positions open after re-sectorisation, new teams are created and a new supervisor position is available.

- Current professional tasks and qualifications can indicate the required development needed.

- Administrative considerations (e.g. probation requirements, salary scales, availability of career opportunities and budgetary constraints) will affect the timing of establishing career possibilities.

- Agreed working conditions and terms of employment described in different industrial agreements are to be taken into account.

- Pension schemes constraints.

- Licensing and endorsement requirements.

- Changes in medical class status or security requirements may dictate a career change.

- Uniqueness of the job with high level of specialisation and dedication to the task. For example, it is difficult for ATS personnel to transfer, or gain promotion in other disciplines of the civil service (International Civil Aviation Organisation (ICAO), 1984).

- 'Industrial surroundings', e.g. working conditions, rewards and remuneration in adjacent States, which may attract employees and offer an alternative to a promotion or career perspectives.

- Policies on sending staff to other organisations (e.g. supplier industry; international organisations).

- Last but not least, readiness for investment commitment and time availability (e.g. a fixed part of the total staff costs is declared to be available for PCD).

5.4.3   Different Organisational and Individual Points of View

There are two points of view for career development, i.e. the organisation and the individual perspectives. The organisation represented by the HRM and HR Planning on one hand provides guidance and means for the optimum use of staff resources. On the other hand, it incorporates programs, which maximise the growth of individuals. Its complicated task is to determine ways in which these two can harmoniously interact and support each other.

PCD programs address the individual growth and productivity within the organisational environment and should be geared towards improving the individual's ability to perform needed tasks and towards smoothing the interface between the employee and the system (McMahon and Merman, 1987).

ATS organisations (or ATMOs) need to be aware that career development might not only help in reassessing priorities, but can also assist employees in taking personal responsibilities for the career and employability within or outside the organisation.

5.5   Role and Responsibilities of Employees

In the individual-organisation relationship described in Sub-chapter 5.3.1, staff is expected to

- initiate their own career plan;

- make self-assessment of their skills, interests and job satisfaction;

- discuss their expectations with their team leaders (or supervisors) and create an agreed development programme;

- set career goals;

- seek information on career options.

These activities should be supported by the organisation, as was outlined before. The following sub-chapter highlights relevant career motivation aspects which need to be addressed.

5.5.1   Career Motivation

The following are important questions related to career motivation and staff responsibility: Does the person

- want to be in a leadership position?

- want to develop technical skills (e.g. for procedures development, safety area and incident investigation)?

- want to be recognised for accomplishments?

- look forward to working with new and different colleagues?

- possess creativity in organisational networking?

- maintain friendship with colleagues in different departments?

- look for opportunities to interact with influential colleagues?

- seek job assignments which will help to obtain one's career goal?

- Have the freedom from personal constraints, which might be necessary for career changes?

- seek participation in workshops and courses in order to expand expertise?

- have realistic expectations?

5.6   Roles and Responsibilities of Managers

Managers play an important part in PCD. They should

- provide a link between the organisation and its staff;

- encourage staff to take their own responsibility on career planning;

- appraise achievements and provide feedback on performance and its implications with regard to future development needs and career possibilities;

- discuss career perspectives with their staff and create an agreed and specific development programme;

- ensure that career perspectives and the development programme agreed are realistic and contribute to the organisation business objectives;

- monitor career progress and provide support, e.g. through coaching and counselling.

5.6.1   PCD as Part of Quality Management

5.6.1.1   International Standards Organisation (ISO) Standards

Reference is made here to the ISO 9000 International Standards for Quality Management (ISO 9000, 1994).

Sub-chapter 5.3.2.1 'Personnel Motivation' of this document highlights the importance that management implements career planning and development of personnel, as a spur to the motivation, development, communication and performance of personnel, especially in service organisations.

Part of career development is the establishment of planned actions for updating personnel skills. According to ISO 9000 (1994) important elements in the development of personnel include:

- training executives;

- training personnel;

- education of personnel on the organisation's policies and objectives;

- training of new entrants and periodic refresher programmes for longer-serving personnel;

- assessment of personnel requirements for formal qualifications and providing assistance and encouragement where necessary; and

- performance evaluation of personnel to assess their development needs and potential.

5.6.1.2   The European Foundation for Quality Management (EFQM) Quality Framework and Guidelines

The EFQM has established a framework and guidelines based on the principle of Total Quality Management (TQM). TQM is a way in which organisations manage their various activities to gain efficiency, effectiveness and competitive advantage to achieve longer-term business results. The fundamental concepts of TQM include People Development and Involvement (in the following People Management) as one of the enablers encompassed in

the EFQM Model for Business Excellence to achieve good results (EFQM, 1996a)[2].

People Management in EFQM relates to how an organisation releases and uses the potential of its people. With regard to PCD this concerns the following activities:

HR planning: How HR plans, (re)deployment and training plans etc. are aligned with the organisation's strategy and policy.

Staff development: How the organisation identifies the potential and competencies of staff and matches it with its needs. How recruitment and career development is managed. How training plans are established and implemented and effectiveness of training is reviewed. How skills of staff is developed through work experience. How teamwork skills are developed.

Performance appraisal: How the organisation appraises staff and helps them to improve their performance (e.g. through PCD).

The EFQM criterion People Management emphasises that personal goals and targets of staff should be aligned to organisational plans e.g. through performance appraisal and PCD plans. As a strategic resource, people in an organisation should be involved in the continuous improvement activities of the organisation, enabled to take responsibilities for decisions and changes and their own development.

The EFQM approach is to encourage organisations to assess themselves against the European Model for TQM in all criteria to get a view of their strengths and areas for improvement (EFQM, 1996b) in a first step and to develop their own best way in addressing quality improvements.
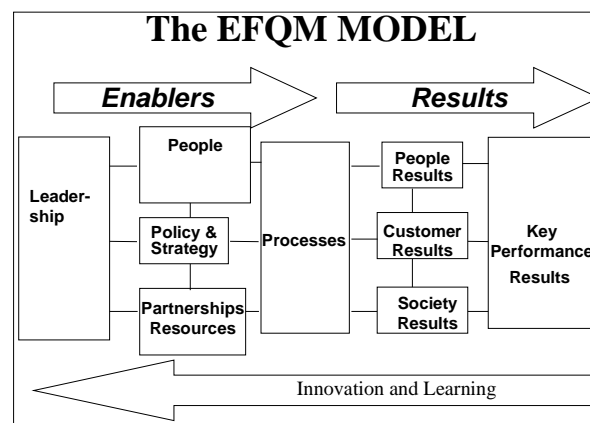

Figure 4:   The EFQM Excellence Model[3]

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[2] The full scope and content of TQM within the EFQM framework cannot be given here. Reference should be made to available documentation to get a full overview of the model, the links existing between the nine inter-linked criteria of the EFQM Model for Business Excellence.

With regard to training of staff in ATS in general and in particular to continuation training, reference is made to the training deliverables and the Work Package at the Training Sub-Programme (HRS/TSP) in the frame of the EATMP- ATM Human Resources Management Programme.

5.7   Roles and Responsibilities of the Organisation

The organisation itself as an entity should

- offer support to employees efforts through an established career planning process;

- provide the infrastructure and environment to promote PCD.

The basic values and policy principles behind an organisational career development plan are closely related to HRM functions and practices such as:

- recruitment policy (e.g. recruiting internally, redeployment, lateral mobility);

- reintegration, rehabilitation and redeployment of staff, e.g. social cases, restructuring or re-engineering;

- succession planning policy, e.g. replacing managers who plan to retire;

- rewards and effort recognition policy, e.g. concerning corporate values such as safety, customer orientation, leadership under emergency conditions, efficiency and innovation in applying new technologies etc. and

- the possibility to link those values to an accelerated promotion or only to non-monetary rewards, e.g. certification, lateral job change;

- training and staff development policy and training availability, e.g. management skill course and training infrastructure;

- policy regarding the relationship between performance and promotion, or relationship between appraisal, promotion and / or remuneration;

- policy regarding rotation of middle level managers in different posts;

- internal mobility regulations, e.g. flexible rules vs. highly governed regulations (statutes); budgetary post systems which could prevent movement of staff; agreements with staff representation and unions; general conditions of work and departmental boundaries and

- regular and early retirement policies and plans.

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[3] After the European Foundation for Quality Management (1999).

5.8   Constraints in ATMOs

Many ATMOs do not yet have a structured, planned career management process within or outside the operational environment. PCD often is an unknown concept or still in its infant stage in the best case. Employees are expected to weave a career path and to take their own initiative. Promotion is perceived as being unrelated to PCD and promotion to a higher grade is often related only to length of service. It is possible to move within career brackets without even changing job or taking more responsibilities.

In addition, in many instances, future MP requirements are not related to potentials identified from current staff. Some of the reasons for this situation are:

- statutory reasons, e.g. promotion procedure based on 'slots' and eligibility criteria based on grade / length of service or seniority rather than merit;

- lack of possibilities for 'fast track' rapid career moves and promotions;

- lack of transparency regarding the criteria for promotion and / or lack of promotion policies;

- transfer to other job is limited and depends on the availability of vacant posts in the same category; but rarely a lateral transfer is possible;

- lack of development and career counselling and official development programmes;

- lack of information on future required staff profiles;

- the typical, in some cases idealistic, view of ATCOs on their profession does not necessarily support the idea of a career change to another ATC job or another job outside ATC. This view would be based on the initial motivation for the job, on the controller's socialisation during the *ab initio* training, on traditional value patterns, which are passed down by teachers / coaches, who joined ATC in a situation when traffic volume was considerably lower and politics and the 'market' played a different role.

5.9   Guiding Principles of PCD Systems

A PCD system should

- be closely linked to the business needs; a balance between the individual needs and aspirations and the organisational requirements should be sought;

- be an integrated approach; an effective PCD system combines the employee, the management and the organisation;

- be proactive and start early during the first career;

- be integrated with other HRM activities such as performance appraisal, training and especially MP;

- address employees at various career stages and allow for a renewal of career, when skills become redundant;

- be accompanied by a proper infrastructure and environment, which provide to prepare and monitor PCD activities undertaken by employees;

- aim at preparing a flexible, multi-skilled, multifunctional staff which can adopt and cope with future changes;

- result in as broad as possible career opportunities;

- be regarded as a short-term action with a ROI more in the long-term;

- be supported by an appropriate internal communication system and potential identification assessment - including self-assessment – tools and methods[4];

- be based on objective information and data, for example, on up-to-date job descriptions, skills inventories, career ladders and paths and job transfer policies;

- address needs of employees at various career stages (i.e. early, mid and late career);

- recognise needs of special groups (e.g. disabled, outplacement programmes).

The following are additional principles for designing a career development system which apply in the ATM context (after Leibowitz, 1987):

- The needs of different target groups (e.g. ATCOs, engineers) should be addressed and the organisational culture, which exists among these groups, should be considered as specific conditions.

- An action plan for implementation should be developed and agreed between management and staff and a budget should be established for it.

- A transparent, long-term approach (which will be evaluated from time to time) should be adopted and maintained.

PCD can also contain an action plan for developing questionnaires on psychological 'shiftability' and stress on a periodical basis.

PCD guidelines should also tackle the issue of unsuitability for duties in operational careers in ATMOs, as a result of withdrawal from OPS duties due

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[4] Within the HRS Manpower Sub-Programme (HRS/MSP) in EATMP there is an intention to develop advanced tools in this field.

to licensing and medical requirements. ATC as a safety critical task is demanding and might lead to stress, fatigue and subsequently to medical cases and / or psychological conditions. Changes in temperament, slow reaction time, loss of confidence or inability to analyse complex situations may develop during the career.

Guideline 5

A proper PCD system should also try to anticipate the possible occurrence of unsuitability for duties in ATC and offer special arrangements for corrective actions or alternative career paths, if possible, at sufficiently early stages.

5.10   Policy Recommendations

1. Training efforts should aim at preparing the transition from the operational to the administrative / managerial environment or other ATC-related jobs in an appropriate way.

2. Policies regarding appraisal interviews, training programmes, promotion, job rotation, relocation etc. should provide an effective process for identifying individual needs and facilitate the establishment of a personal development plan.

3. MP should cater and make provisions for actually carrying the PCD plan out. PCD plans and programmes thus should be contained in the through-flow and out-flow (e.g. SP) of staff in the MP process (see EATMP, (in prep.)).

This will result in the following organisational and individual benefits (see next Sub-chapter):

5.10.1   Organisational Benefits:
- a more effective Personnel Development process;
- a better use of staff skills;
- a more flexible staff;
- increase staff satisfaction, motivation and loyalty;
- integrated HR approach;
- improved communication.

5.10.2   Individual Benefits:
- increased job satisfaction;
- improved confidence in skills;
- increased employability;
- broader career perspectives;
- greater control and responsibility in career course.

6.   ATC CAREER

6.1   ATCO Career in Different States

In different States controllers can develop and rotate / move into different careers, depending on local HRM practices. Some general principles can be summarised as following.

6.1.1   Recruitment and Selection Mode

In most cases recruitment and selection of controllers is from external applicants. In some cases, internal recruitment from employees who are already in the organisation is also possible or required, e.g. from the ATC Assistant (ATCA) grade. In any event competitive exams, evaluation of capacities by interview, English test and medical examination in compliance with ICAO Annex 1 will typically characterise the selection process. Some States will have educational and age prerequisites and some additional selection elements such as assessment centres (for further details see EATCHIP, 1997, 1998b).

Recruitment rates and selection ratios differ between States. Typically around 10% of all applicants will pass successfully the recruitment and selections stages and enter training.

6.1.2   Training Process

This is a relatively long process, where theoretical and practical instruction can last some three years. It consists of different courses, phases and simulator training, where a trainee can fail at various exit points. In addition, the training processes during practical training (OJT) last few more months and are followed by the issuing of a licence or certificate of competence and associated rating and validations before being permitted to provide ATS.

This long training and qualification process is accompanied by a substantial failure rate varying in different States. It is not untypical to find in the European Civil Aviation Conference (ECAC) area that around 30% of trainees fail at one of the various training stages.

6.1.3   Retraining

ATCOs must normally meet some medical requirements and hold a valid medical certificate of the appropriate class which depends on national regulations and must be renewed at specified intervals.

They also must have performed a certain amount of operational control over a preceding period of time, in order to receive an extension of their ratings. Some States require taking refresher courses and subsequent checks. Retraining is needed in order to operate new equipment or to perform new

procedures. In addition, a controller can participate in professional conferences and seminars where new technological developments are presented.

6.1.4　　Career Advancement

In many ATS organisations, ATCOs are encouraged to seek internal promotion. Some controllers like other ATS staff members wish to advance in their career towards managerial or executive status.

The policy adopted with regard to balancing the needs of the organisation and those of the individual in an appropriate way (e.g. 80/20 rule) has to be considered here also.

Broadly speaking, ATCOs have four major career paths:

1. changes within ATC environment (e.g. airport and airspace department, policy and co-ordination department);

2. changes to institutional training;

3. changes to Research and Development (R & D) and other careers;

4. changes to managerial careers.

These careers are described in Sub-chapters 6.2 – 6.4.

Having served a few years at the control position, and / or losing the licence due to medical or administrative regulation does not mean the end of a career. There is always a need for staff knowledgeable about ATC in different domains such as:

- flight dispatch technical co-ordinators working for airlines;

- experts participating in aeronautical studies (e.g. in order to determine the optimum level of services which a national ATS agency should provide);

- experts contributing to airspace management consolidation and improving the efficiency of airspace configuration, design and traffic flow, airspace sector reorganisation to aid flow management;

- consultants to radar data processing systems, which take the data from the radar and converts it to a display for controllers;

- experts around the bargaining table where new labour agreements are negotiated to prevent situations where working conditions may jeopardise safety;

- running operational tests on new en route centres as a project (e.g. Swanwick);

- Subject Matter Expert (SME) within airspace users or Communications, Navigation and Surveillance (CNS)/ATM service providers;

- last but not least contractors at private ATC providers.

By identifying a controller, for example, as an excellent potential instructor or supervisor, the controller becomes attuned to evidence and feedback which confirms that reputation and self-concept. The effect of this knowledge will often be that it becomes a kind of 'self-fulfilling prophecy' (Peterson, et al., 1991).

For example: A 'career change' can be demonstrated in a unique case; a move between Shanwick Oceanic Control and the Scottish Area Control Centre, both of which are in the same building at Prestwick. The "Shanwick Oceanic Control" is the 'Oceanic' part in the Scottish ACC. Operationally, they are two units with adjacent airspace and co-ordination procedures etc. Administratively, they come under the same top managers with a split at the upper middle management point. Subject to holding the appropriate validation, staff could be moved from one side to the other since they all have ACC ratings and technically work at the same unit.

6.2   ATC-Related Careers

Specialisation of the ATC disciplines is now common practice in many States. Where once ATC training covered all ATC disciplines and controllers may have held up to four ratings, the current trend is for specialised training. This means that a controller is either an Aerodrome or Approach or Area Controller, but seldom all three. Specialists may not always appreciate or understand the realities of controlling in another discipline (Pavlicevic, 1998).

6.2.1   Career Change within OPS

6.2.1.1   Change of OPS Centre

Depending on valid ratings, controllers may change career between different en route control centres, control centres of upper airspace above FL 245 and aerodromes. Changes between regions in the same State is not only related to ratings and endorsement but a personal matter (moving a family; social, occupational and educational ties etc.), see also Sub-chapter 6.10.2.

6.2.1.2   Change of Working Position

Depending on the ratings held, ATCOs could work at different workstation, whether as a radar operator or co-ordinator. Depending on local terminology, some will work as 'executive controller' (planning and radar), some as assistant controllers, in other States there are 'chief sector controllers', approach non-radar, approach radar, radar-strategic controllers, radar-tactical controllers or approach-assistant controller, sector assistant.

6.2.1.3   Changes Between Civil / Military Sectors

The type of relationship between the civil and military organisation has impacts not only on the organisational scheme and the nature of co-ordination, but also on career development opportunities. When the two are not incorporated in a single ATC system, one can find a typical move from military to civil service.

6.2.1.4   Shift Supervisor

On the operational stream, one can become an instructor, rating examiner and supervisor in an operational unit or sector. In many ACCs and approach centres, operational management is increasingly exercised by ATCOs. It is not unusual to find controllers who become Control tower supervisors, Heads of ACCs, Heads of Operations, or even Director General of Air Traffic Operations.

6.2.1.5   Other (Miscellaneous)

- Air Traffic Flow Management (ATFM) (See also Annex A);

- Airport and airspace system requirements;

- ATC Evaluation Officer who monitor controller proficiency at ATC units.

6.2.2   Changes to Training

Others will be instructors at basic training or OJT. The following list summarises some of the common opportunities for ATCOs in training / examination:

- Instructor at ATS colleges or training centres;

- OJT Instructor (OJTI);

- Developer of ATC training syllabi for obtaining ratings at national ATS authorities;

- Examiner.

6.3   Changes to R & D and Other Careers

6.3.1   Contributors to System Design and Development

While developing new ACCs or introducing new technologies, ATC procedures with the new equipment have to be developed and verified, as does interoperability with the adjacent ACC's infrastructure.

Controllers and engineers can check out and / or comment on all the workstation and display functions, about the system's operation, apparent

faults, and investigate them, as well as checking for system integrity. This is the beginning of a human test for the total system assisting in developing "what if" scenarios and functions to check decisions.

It is therefore necessary to ensure ATCOs participation in:

- all new ATC-related projects to be undertaken at both local and national level (e.g. developing new systems), for example:

  ➢ advisor to Operational Error / Deviation data collectors and analysts;

  ➢ ATC technology developers advisor;

  ➢ advisors to Modelling and Analysis Capability analysts;

  ➢ Simulators development advisor;

  ➢ members of Aerospace Laboratories;

- research to determine the capacity of the ATC system and the workload to be carried by each ATCO e.g.

  ➢ Member of an experimental centre (e.g. Brétigny, France) or Systematic Air Traffic Operations Research Initiative (SATORI) in the US;

  ➢ Investigator of ATC workload.

Other careers could be:

- writer of guidance material and letters of agreement;

- international career as an expatriate controller;

- journalists and editors in aviation-related magazines;

- specialist member of a civil aeromedical institute.

6.4   Changes to Managerial Careers

On the management stream, advancement to middle and higher management and / or executive status through regulatory, safety research or administrative and leadership functions is a possibility. In some States (e.g. France) qualified engineers traditionally fill management positions.

Examples for managerial careers are:

- general managers;

- members of the Executive Board and appointed officials of IFATCA (e.g. Liaison Officer, Deputy President, Chief Executive Officer, President,

Executive Vice-President Professional, Executive Vice-President Europe etc.);

- member of a Safety Regulation Group, or a Systematic Safety Management;

- administrative or managerial position at the national ATS agency;

- being transferred to the national Civil Aviation Administration (CAA).

6.5 Technical and Maintenance Staff Career

Only a short reference to PCD for technical and maintenance staff is made in this document. Further work will be carried out in EATMP in the near future.

6.5.1 Recruitment Mode

Technical staff, for example electronic engineers, are normally recruited in the labour market and selected via competitive examinations. States may require different educational levels, specific certificate levels upon graduation from certain universities, evidence of membership of a recognised professional body, or a specific guild (in a given State) and / or State exams.

6.5.2 PCD

Different ATMOs offer different levels of initial training to technical and maintenance personnel.

The *École nationale de l'aviation civile* (ENAC) in France trains students recruited at *baccalauréat* level plus two years up to 36 months. Students receive an engineering degree from ENAC.

Other ATMOs will only offer supplementary or ad hoc training, at the assigned site in order to fill a specific engineer position in operational environment.

In-house resources can provide such training partly or completely by specialists, training courses at the training establishment and / or with the assistance of service providers e.g. for the equipment in use in operations.

6.6 Challenges from Changing Career in ATC

Controlling air traffic is a career in itself. However, it does not necessarily prepare nor develop special management skills which might be needed in another career. As in other work environments, as employees gain experience and become more skilled, only some of them are likely to aspire to increased responsibilities and the natural associated social advances (ICAO, 1984).

It is not unusual to observe ATCOs who found themselves plunged without much preparation into an unknown and thus foreign bureaucratic *terra*

incognita. This experience can create feelings of alienation and conflict of loyalty between their new and the former operational world.

The main challenge in ATCO career development is the transition from an operational environment to an administrative, managerial or bureaucratic one.

Experienced ATCOs are familiar with their tasks and are used to providing clear instructions. In addition, they are used to working relatively autonomously. For these reasons, after a certain number of years working in an operational position, many ATCOs find it difficult to adapt to the new job and tasks and to unlearn certain habits or approaches to problems. A transition, if carried out without proper preparation or training, may impose difficulties, e.g. when the communication at the operational environment was characterised by clearer instructions.

Sub-chapter 2.3 of ICAO (1984) 'Career Progression' states that "personnel should therefore be given the opportunity to attend varying levels of administrative instructional courses to provide a career structure through to top management positions".

Guideline 6

The transition of ATCOs from an operational job environment to an administrative or managerial one should be carried out following appropriate preparation, experience and / or training in order to avoid failures.

6.6.1 Constraints and Problems in Other Careers for ATCOs

At first the number of positions at middle-to-top management level will normally be fairly limited.

Secondly, a good ATCO will not automatically become a successful instructor, supervisor, project co-ordinator, manager, or representative in safety symposia dealing with ATS matters etc. Even after having an opportunity and after being provided with adequate training as part of the development programme, not everyone will be able to attain the required level of managerial skills.

In addition, instructors who come out of the operational environment on medical grounds or 'drift' into the management area and get into the licensing and regulation arena may suffer severe **credibility** problems within a year or so. They also may lose status among their former peer groups.

Furthermore, most ATS personnel are still civil servants or grow up in a civil or public service environment and thus may be subject to strict regulations concerning promotion and career development issues. In particular, they might be subject to constraints from pension schemes.

In fact, ATS organisations face a permanent dilemma, which is difficult to overcome. On the one hand, due to the special nature of ATS, selected

individuals need to undertake a considerable long and expensive training process. On the other hand - and as mentioned earlier - some staff members might show signs of unsuitability after certain years of service. Many others will aspire for a change or assuming more responsibility. The dilemma or the challenge is how to achieve the necessary ROI and meet the operational and personal needs of staff. Should a contract assure that at least a minimum number of years will be spent at the operational environment and that the rest can be spent in other duties? It may be desirable for a period of instructor duties to be incorporated during the 'operational' phase of the career, organised such that current validity is not affected. Should promotion prospects within ATS organisations - many of which are still fully or partly government oriented - be limited by contract solely to ATS work and thus prohibit a normal civil service career, or should they be limited by probation requirements?

6.7   Relevant Other Policies on PCD

Addressing properly the ATC career challenges also means understanding the relevant concerns of staff, social partners and staff representatives together with the financial implications (see for example career-related sub-chapters of the IFATCA manual in <u>Annex D</u>).

6.8   Changing Corporate Environments Impacts on PCD

The transition of ATS organisations from state-owned to privatised or semi[5] privatised corporates is an increasing tendency. This transition has impact on career development plans.

Organisational or corporate changes (such as privatisation) will almost certainly lead to re-structuring, downsizing of administrative staff, more competition, outsourcing of certain services, changes in working conditions, changes in job security[6] and new tasks / jobs. Changed companies are forced to inject fresh ideas or may need people not only with ATC background, but also in addition people with background in marketing, information technology and business acumen, if they are to compete with similar organisations.

More emphasis will be put on efficiency, which could lead to the use of sophisticated investment-appraisal techniques, such as "economic value added", which takes into account interests of all shareholders (or a wide variety of customers and shareholders). Unit managers will be held more accountable for their business results, and the use of performance-related pay and other non-monetary rewards, e.g. stock options will increase.

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[5] In this context it is worthwhile mentioning that semi- and quasi-privatisation could have significant drawbacks, because they may fudge responsibilities and blunt incentives.

[6] In governmental working environment long-term employment may have meant a 'job for life', or a promise of a long, secure career. In privatised environment people are more and more kept in the organisation paid and promoted strictly on merit.

ATMOs will in the future operate their ATS in a more business-like manner and become more customer-oriented, including identifying costs, knowing what customers need and responding creatively and rapidly to these needs.

6.8.1 PCD in Changing Corporate Environments

Career opportunities in ATS organisations (and ATMOs) are closely related to labour agreements on working conditions with unions and social partners representing ATS staff.

For example, a recent five-year labour agreement signed between the US Federal Aviation Administration (FAA) and the union representing America's 15,000 ATCOs not only reclassified its ATC facilities to reflect the differing degrees of complexity in controlling aircraft at various airports. It also looked into the planned award incentives to controllers and supervisors who met specific safety and performance goals and changes (through attrition) of controller to supervisor ratios from a level of 7:1 to a ratio of 10:1 (Richfield, 1998).

It is obvious that such labour agreements, which trades pay performance conditions for changes in organisational structure have direct impacts on career opportunities.

6.8.2 Needs for Ex-controllers in New Corporate Environments

Experienced ATCOs who change their career from the operational environment to other tasks can significantly contribute to those new business needs. They could be qualified not only in operating and maintaining the ATC system infrastructure, but also in

- conducting research and development activities in associated fields, e.g. simulation, simulator development;
- hiring of personnel, e.g. recruitment and selection activities;
- involvement as a SME in purchasing and evaluating new ATC and training equipment;
- implementing a cost accounting system and other management systems which promote results-oriented performance (as was exemplified in Sub-chapter 6.8);
- conducting / participating in project work for external / internal customers.

Part of this new business approach implies that students should progress more rapidly than the current situation and better be able to handle complex traffic at an earlier stage (e.g. OUTIL in Reims, France). High-fidelity simulators, which exactly replicates the live environment or ATC simulators, which are upgraded to the point where they match the performances of aircraft try to provide a solution. Such simulators need at least for their certification experienced active ATCOs or ex-controllers.

The new corporate environment means that young assets can become ageing liabilities. Early-retirement plans to unload middle managers are more frequent. More and more ATS organisations offer for anyone over a certain

age (and minimum number of years in service) to receive a topped-up pension if they leave.

6.9 Controller Early Retirement Schemes

Many ATMOs have already created, or are going to create, an Early Retirement Scheme (ERS) for controllers. The reasons for establishing ERS are manifold and reflect the specific demands of the profession. For example, in terms of shift work, stress and strain and the medical and health impacts this might create on one hand as well as incapacity of senior staff members to continue to work in OPS.

The following is a short reflection on some ERS issues which relate to PCD.

6.9.1.1 Budgetary and HR Cost Impacts of ERS

Since costs for ERS can be prohibitively high, the need to fund appropriate schemes is of concern for the pension system.

Of even higher concern should be the early loss of human capital that ERS could create. Any retirement, loss of ATCO licence etc. is a loss of human capital, which needs to be regained by recruiting, selecting, training and introducing new people into the system. This already represents a high portion of staff costs in most member States. Any earlier than planned loss of staff due to early retirement will, therefore, not only increase overall staff costs due to the early retirement pensions, but also the costs due to new recruitment. As a consequence the capital available for other investments will be reduced.

Sensible solutions could possibly be found within a PCD system which aims to keep staff employed in other ATC functions or other jobs without impacting agreed retirement and pension regulations.

6.9.1.2 HRM Impacts of ERS

Effort should be made by HRM in ATS organisations to avoid a situation where operational staff are unable to continue to work 'manually' in ATC operations and where it is too late, or of no benefit for the organisation and /or staff to retrain / move to other work.

The sensible way forward would be to develop a HRM system for controllers which, right from the beginning permits consideration of alternative career opportunities.

These possibilities need to be explored and developed to make provisions for career changes in, for example, management, project management, training and supervision so that a situation as outlined above does not occur. This is of increasing importance since the 'life cycle' of a career purely as an operational controller will in the future most certainly be shorter than the working time until regular retirement.

Some ATS organisations therefore consider, for example, changes in contracts for newly appointed controllers by stating that 60% of their working time in the organisation they will work as operational controllers but 40% they will spend in other tasks (in some national organisations it is 60% in other duties and 40% in ATC). This approach certainly creates a challenge to HRM, especially with regard to controller MP, PCD planning and the identification of staff potential for any future jobs as well as their skill requirements.

There is evidence for certain skills to increase with age, including those that are crucial in management, as management of people, counselling, coaching and consulting, spotting problems before they occur based on rich work experience etc. The wealth of experience and expertise available is more and more acknowledged in other industry and there is a growing tendency to retain senior staff members or employing them in new ways (The Economist, 1999).

6.9.1.3   Seniority

ATS organisations sometimes find themselves with a high number of staff at senior ages (often referred to as 'retirement bulk'). Accumulative experience shows that a significant number of senior controllers are poorly equipped to handle other jobs after a long period of working in operational environment. They often find it difficult to accept another job on offer or feel that it is not in line with their professional interests or values and that they have not been appropriately trained.

One very important constraint is, that long received benefits or extra allowances, which often are fixed and normally grow with seniority, might cease as an effect of moving into another career.

Furthermore, most ATCOs during their operational life do not want to spend long periods away from the operation. Even if staff could be convinced to be away from operations, there is a very significant problem in maintaining validity of their operational endorsements / ratings, see Sub-chapter 6.6.1. Most certainly staff will not wish to undergo retraining and full validation after an absence.

Guideline 7

Seniority constraints need to be taken into consideration in PCD approaches and concepts, and solutions need to be found which balance the disadvantages imposed by changes in career.

An early start of PCD during the controller career, and a spread of development or continuation training in line with operational work and rating maintenance will help to alleviate the situation.

6.9.1.4   Manpower Constraints in OPS

One of the most serious reasons for not being able to offer controllers a change in career is the lack of staff in OPS. This might be due to higher than

expected traffic increase, the necessity to open more controller positions, unexpected losses of personnel or low success rates in *ab initio* training.

Very often the reason will be that controller MP is based only on ORs and no provisions are made to take into account the need to employ OPS staff in other jobs and tasks (e.g. in training) and any necessary development training. Furthermore, the non-availability of PCD for controllers could create a situation where staff develop the view that they are stuck in their careers.

MP issues related to PCD are summarised in Chapter 7.

6.9.1.5   Impacts of Other ERS Policies on PCD

Staff Associations, Unions and professional bodies of ATCOs have adopted retirement and pensions policies which reflect the values and interests held and meet the unique demands of the profession with regard to earlier than normal retirement age (see also Annex D). Existing retirement pension regulations in States also have an impact. These matters need to be dealt with on an individual State basis.

However, an ERS for controllers does not necessarily imply that there is less benefit in PCD for OPS staff. Many ATCOs do prefer to continue in another career within or outside ATC beyond the agreed early retirement date. Examples of this are found in the re-hiring of retirees for *ab initio* training, recruitment and selection work or projects on a full or part-time basis.

The quality of training given by retired ATCOs will deteriorate due to loss of actual experience in a permanently changing environment like ATC. There should be a time-limit for non-active ATCOs, especially in regard to simulation training. ATCOs can be kept current by training.

Guideline 8

The benefits of having very experienced controllers available after retirement also helps to solve staffing problems in other sections (e.g. training) where otherwise active controllers need to be employed. This could prove beneficial in a controller shortage situation and / or in view of the fact that staff enjoying operational benefits and allowances are not easily attracted to other functions.

See also Sub-chapter "Retirement Age" in Annex A.

6.9.2   Impacts of Late Retirement

Seniority presents a subtle management challenge regarding available career paths. Despite some de-layering and talks about horizontal management, many organisations are bound to seniority rules, e.g. for upward promotion. The lack of career prospects could thus become a hindering factor in motivating staff to accept or seek other posts. In effect, only some staff will become watch supervisor or Senior ATCO, only few will get managerial posts as was emphasised in Sub-chapter 4.4.

Demographic impacts will also affect future career opportunities. As the 'baby boomers' age, organisations will increasingly witness top-heavy structures with the effect that fewer opportunities will be available.

Finding and training a replacement typically costs about 55% of a departing employee's annual salary. Accommodating senior staff member needs in PCD - e.g. offering courses and training that help to overcome developed attitudes and long held beliefs of senior staff concerning, for example, getting to use advanced computer technology - are of considerable benefit.

It will, however, in some instances be difficult to accommodate all senior staff which, for health and safety reasons, are longing for careers outside the operational area.

6.10   Innovative Approaches to Career Development

One of the goals of PCD is to help employees to set a higher level of awareness and self-insight and to take ownership of their own careers. More innovative approaches to PCD and more opportunities for mobility are required in order to enhance career motivation.

The following Sub-chapter outlines examples for multiple careers in network-related organisation.

6.10.1   PCD in Network-Related Organisation

Innovative approaches include development of multiple careers and PCD in a network-related organisation, for example in

- ATS Academy or ATC college;

- CAA;

- Airport administration;

- Military ATC authority;

- Department of Transport;

- ICAO;

- A consultancy branch, which sells ATS-expertise to interested parties etc.

Regulator authorities need to have sufficient in-house knowledge of ATS processes and procedures. Audits conducted by regulators with little or no ATS expertise may not be appropriate to detect serious safety deficiencies before they occur.

It seems therefore a 'natural' career development step to transfer from the career at the national **provider** of a safety-related service like ATC to a

national **regulator** for the aviation safety standards. However, compared to a relatively seamless move within an organisation from one operational unit to another, the 'mental' change from being a provider of service to being part of the regulatory system might create difficulties in adjusting to these new tasks.

For the individual ATCO, career development in many respects implies a change from the 'core business' to 'direct' or 'indirect' support tasks (EATCHIP, 1996c) for example OJTI, administrative or managerial tasks.

Guideline 9

ATC is a highly specialised profession, in which the cost associated with training new recruits up to the standards for obtaining their ratings can become very high.

Instructors and developers of proficiency training programmes must therefore have solid background on facilities procedures and standard operating procedures.

6.10.2   Career and Social Life

Remaining at the operational path of the ATC career has some important implications on the social life of ATCOs. Pavlicevic (1998) summarises some of the social impacts:

- Shift working for years implies that ATM staff work when most people do not. Shift work can isolate socially. They are free when others are office-bound. They are likely to work (or be on standby duty) on weekends, public holidays and when others can regularly participate as members of sport teams. Due to rostering constraints they may miss family events or unable to attend parent's night at their children's school.

- In the workplace of most radar controllers, it is impossible to see daylight.

- The operational staff may suffer from pressure, stress and fatigue, especially during holiday seasons, when others enjoy travelling. The sense of responsibility even increase due to legal implications in the event of human error. This may lead to stress and can disrupt domestic harmony.

- There is not much public recognition of their career. On the contrary, public discontent due to ATC-related delays is frequent. Most of the time the profession (and its associated status) goes unnoticed, unless ATCOs go on strike or a controller makes a mistake.

- Due to the remote locations of ACCs, controllers are likely to live in suburbia with a workplace being off the public transport track. They are unlikely to be able to walk or cycle to get to work. Fast food during shift work is also not untypical. Food is becoming more and more an important issue in ATMOs.

Guideline 10

Due to working conditions, their impact on social life and many other reasons, the ATC career might appeal only to people at younger ages. With age and changing circumstances in family and social life, difficulties in adapting to shift work and to high workload might develop in controllers. This could trigger a desire for 'normality' of the day schedule.

Although controllers have pride and satisfaction in their work and in recent years their salaries have considerably improved, a long lasting, sustainable operational career may not be suitable or feasible for every controller.

PCD could become an attractive option and might offer other professional opportunities which are better linked to the mentioned social life circumstances.

The rationale and the necessity of PCD should be discussed with the target group (ATCOs) as early as the *ab initio* training, in particular as there is reason to believe that the average working span of an ATCO will decrease, e.g. due to changing job attitudes, stress-related issues and arguments mentioned above in Guideline 10.

6.10.3 Reconciling Career and Family

Career planning and development should help employees to achieve a balance between a financial reward and the wish to express their values, the need to make a difference in society and to fit harmoniously with their private priorities such as families (McMahon and Merman, 1987).

It often proves difficult for staff to combine family duties e.g. raising children with a demanding career. Some ATS organisations face the challenges of **interrupted careers** of especially female controllers. For example controllers could take years off (if permitted) to raise children, and come back as a **part-time** while children are at school.

Constraints for PCD will normally occur or the career might be disrupted in addition to the fact that licensing endorsements (ratings) will not be valid after a longer time period.

Nordic States have gone to great lengths to make it easy for employees (both sexes) to combine career and family and the tax system deliberately favours dual-income families, which implies dual-careers. There is increasing evidence that this tendency (dual careers) is becoming increasingly important.

In addition, many employees seek flexible working hours and with the ageing population in Europe, increasingly personal commitments include looking after elderly relatives.

Guideline 11

It is a challenge to ATM organisations, to cater for a more balanced and reconciled career of controllers. Also HRM policy will have to be shaped in such a way as to make family / social life and career compatible.

7.   PCD LINKED TO OVERALL MP

As has been outlined earlier in this document, PCD is a long-term undertaking reaching in effect beyond the 5 years or more time horizon. This time horizon has its own challenge for any organisation but a special one for ATMOs. The further growth of the aviation business as a whole, change in the business of ATS organisations (and ATMOs) and its regulations, corporate changes and technological advancements and their impacts on skill requirements is uncertain. This could all lead towards disbanding any long-term planning at all, or not giving it much importance.

However, long-term planning is becoming more critical for the effective functioning of ATMOs because of the fact that the workforce of an ATMO cannot be turned around and led towards new directions in the short-term. Thus, short-to-long-term MP and PCD – both geared towards organisational business objectives – will become strategic key HRM functions in the future and should gain a higher profile.

For an example on impacts from ATCO career progression on MP see Chapter 5 in EATMP (1999).

This chapter outlines some elements of long-term PCD planning and its links to overall MP.

7.1   Succession Planning (SP)

SP is the early identification of staff members that have the potential in terms of skills, knowledge, experience etc. to fill posts in the future. Thus, SP is a 'forward' planning approach in the sense that it uses forecast data to identify career openings in the future.

The approach is also a 'top-down' approach in which specific openings are allocated to successors according to defined rules. The basic principle of SP is that staff move into another job or career if an actual opening exists. Staff retiring, transition or promotion to another career might create career openings. Thus, transition, retirement or promotion data need to be available in the first instance for SP to occur.

If SP is used in conjunction with PCD, this could become a long-term planning issue since most openings will require staff succeeding in a post to be appropriately trained and prepared for the move over a longer time period. In addition, contingency has to be made early enough for ATCOs moving out of a position into other careers (see Sub-chapter 6.1.1 in EATMP, 1999).

7.1.1   Identifying Job Requirements in SP

Clearly, the jobs and posts concerned will first have to be

- identified (e.g. still required or not in the future);

- analysed and

- described

with regard to the requirements on the future post holder (the successor).

Examining future jobs in the long-term perspective will have to take into account the changes in the business of ATMOs, possible corporate and technological changes and their likely impact on job requirements. This in turn will have impacts on selection and development training etc. (see EATMP, in prep).

In any case, means and methods need to be available to keep track of any job changes or changes in the job / post requirements concerned.

Based on this, manpower planners and HR managers will identify the

- number of posts for SP;

- whether to fill the post from within or from external sources;

- career path (e.g. training, R & D, projects, management);

- unit / location of the post;

- likely dates at which they need to be filled;

and the requirements in terms of

- ATC experience (e.g. length of service, ratings held);

- prerequisite qualifications (e.g. as instructor, supervisor);

- age requirements (e.g. upper and lower age limits);

- prerequisite training and development before entering the post (e.g. courses or training modules);

- specific abilities, skills and other personality aspects required from the post holder (e.g. social and teamwork skills, presentation skills);

to name but a few.

7.1.2   PCD and SP

HR managers will use the data outlined in the preceding sub-chapter as input and identify the likely start of the PCD process to fill the posts from within the organisation.

HR managers could also use the profile to identify directly the persons from the personnel database which could contain data from annual appraisals which would principally fulfil the profile and other criteria (e.g. staff promotion). Another possibility could be to advertise the jobs internally by clearly stating the criteria to be applied and the availability of posts.

An advanced approach in SP for managerial jobs could look as follows:

1. Based on the profile of the post, HR managers identify eligible staff members, which they assume will possess the potential for managerial jobs.

2. HR managers discuss this with the staff concerned to obtain their views and whether to proceed any further in the process or not.

3. To verify whether staff willing to proceed in the process possess the assumed potential, staff are invited for appraisal interviews and / or assessment centre for more formal assessments.

4. Based on the results of potential assessment, further discussion takes place to agree on appropriate training and development steps to be taken.

5. Available slots for training / development are discussed and agreed and planned with staff and management (e.g. sector supervisor).

6. Staff participate in training modules or other development activities are available for filling openings after successful completion.

7.1.3   'Domino-Effect' in SP

MP and HR managers need to be aware of the 'knock-on' or 'domino-effect' from SP, that is, any replacement from within the existing workforce will create a need to replace staff moving in their career and so on. The complexity and dynamic which SP creates for MP is rather overlooked.

The domino-effect could lead also to a 'replacement by chance' philosophy compared to a PCD clearly geared to organisational needs, quality and correctness of the individual selected for the opening. The side effects of this could be serious problems in promotions, lasting effects in staff morale and productivity etc.

7.1.4   PCD Planning Methodology in the Frame of Overall MP

With regard to SP and taking account of the related problems, it is strongly recommended to design the process of PCD in SP in the frame of overall MP methodology. This methodology should allow to

- keep track of staff members throughout their career(s);

- plans PCD steps and activities along the timeline and

- provides reports on the status at each point in time.

One possible approach which could be followed is to provide charts on

- current and predicted internal **supply** of manpower including staff promotability and possible placement;

- existing in the future **demand** on manpower in the organisation in different jobs and reflects a need to replace a staff member in the year in which such change is contemplated and thus will automatically cause a new vacancy or demand which needs to be displayed and to be filled in the year of planned placement or promotion;

- **manpower plan** derived from (predicted) supply and (predicted) demand and identifies the needs for external supply of e.g. new recruits.

It is obvious that the need for external supply of new recruits (e.g. *ab initio* trainee controllers) is related also to other requirements and most importantly the ORs that need to be fulfilled. The planning for ORs is described in detail in EATMP (in prep.).

Figure 5 outlines the processes.
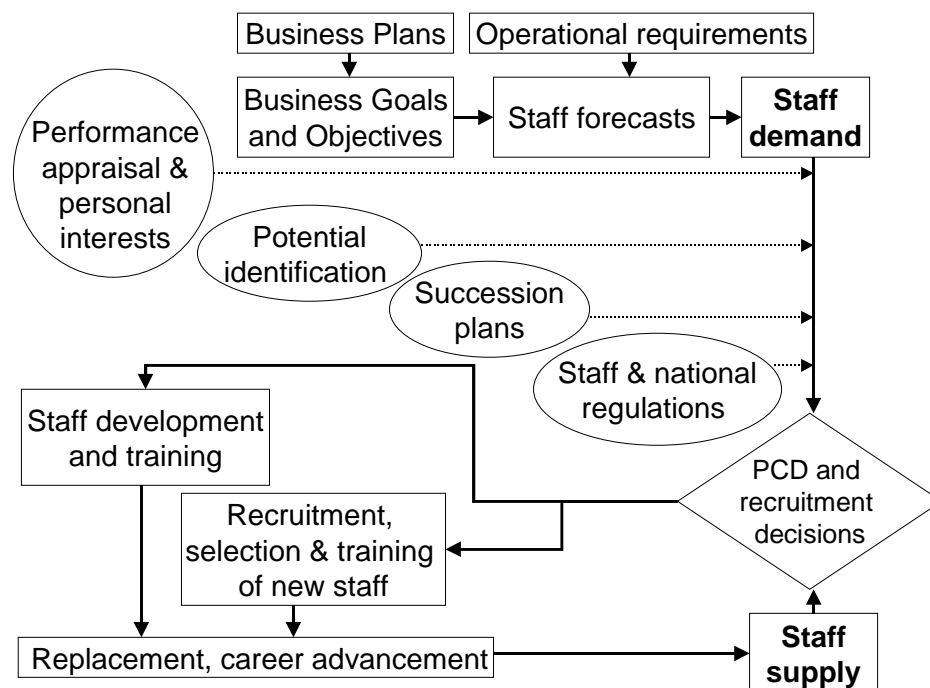
Figure 5:   PCD and supply – demand in overall MP

Guideline 12

PCD planning via SP should be linked to overall staff planning at all levels and functions to

- keep track of staff throughout their career(s);
- identify / forecast future staff needs in other jobs;
- plan events in the PCD process;
- replace / promote staff in time;
- identify new needs created;
- identify additional requirements for external recruitment of new staff.

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8.   SUMMARY

The success of an ATS organisation is linked to the skill, knowledge and commitment of its staff and their potential for learning and adapting to a constantly changing technological ATC and corporate environment with its increasing complexity and dynamics. One organisational way to cope with these challenges is to engage in staff development and in particular in career development plans.

PCD is the systematically planned, designed, implemented and controlled identification and promotion of the abilities, skills, attitudes and knowledge of employees in line with the individuals' expectations and needs whilst taking account of changes in jobs and tasks.

PCD should first and foremost be viewed from an organisational focus, i.e. the positions which lead into certain career paths that are required in an organisation. Organisations do not embark on PCD of their staff unless they expect benefits in doing so. The overall objective of PCD is to ensure that the business needs of the ATMO with regard to future requirements in different jobs within the organisation are met.

PCD should also be viewed from a personal point of view i.e. the way staff perceive their careers. However, staff should be encouraged to take responsibility for their PCD.

PCD should be done in parallel with changes which the organisation pursues in its strategy and should be balanced against the needs and abilities / skills possess by its staff.

A decision needs to be taken on who should be responsible for the career development, the organisation, the individual or both.

Independent of the policy or philosophy adopted for PCD, staff development should always be closely linked and aligned with the organisation's business strategy and objectives.

HRM activities, especially rewards, promotions, retirement and pension schemes, and PCD should foster and support these strategies. They should be communicated in an effective way to increase awareness and trigger the response of individuals.

Two main paths exist in ATMOs with regard to controllers:

- career change to another ATC job (continuation);
- career change to another job outside of ATC (transition).

PCD is a strategic long-term process which includes the following stages:

1. Planning of future HR quantitative and qualitative needs on a time scale. MP should cater and make provisions for actually carrying the PCD plan out.

PCD plans and programmes should thus be contained in the through-flow and out-flow (e.g. replacement or SP) of staff in the MP process.

2. Development of career paths which

- are proactive and start early on in the career;
- are integrated with other HRM activities such as training and MP;
- address employees at various stages in their career;
- are accompanied by a proper infrastructure and environment;
- aim at developing a flexible, multi-skilled staff;
- result in as broad a range of career opportunities as possible;
- are regarded as a short-term action with a ROI more in the long-term;
- are based on objective information and data;
- recognise the needs of special groups (e.g. ATCOs, engineers);
- include an agreed action plan for implementation and a budget;
- are transparent.

A proper PCD system should also try to anticipate the possible occurrence of unsuitability for duties in ATC and offer special arrangements for corrective actions or alternative career paths, if possible, at sufficiently early stages.

PCD can be developed in a network-related organisation, for example in an ATS academy or ATC college, CAA, airport administration, military ATC authority, Department of Transport, ICAO etc.

PCD could become an attractive option and could offer other professional opportunities which are better linked to changing circumstances in social life.

3. Identification of staff potential; *A policy and methods for continuous assessments on-the-job, directly related to the business objectives of the ATS organisation (e.g. experience / performance in external consultancy work, teamwork and interpersonal skills, reduced delay targets), should be adopted. This will provide management with the information and input to consider a broad range of candidates for a different job and to give feedback to staff.*

4. A dialogue between staff and their team leader, where relevant information about options, opportunities and goals is provided. It gives staff feedback on their abilities, potential for development and shortcomings, while involving them in stating their career objectives, timetables, needs and values. It should not create high expectations on the one hand but rather proactively manage job opportunities.

A career discussion should as far as possible be conducted in an open and honest climate where personal needs (e.g. avoidance of 'burn-out' risks), strengths, weaknesses, feelings, aspirations, current performance and potential skills can be freely addressed.

In considering career perspectives, staff and organisations need to take into account ORs (at current and designated job), current professional qualifications, administrative considerations, agreed working conditions, pension schemes constraints, licensing and endorsement requirements,

changes in medical class status, investment commitment and availability of time.

5. Career development training planning. Training efforts should aim at preparing the transition from the operational to the administrative / managerial environment or other ATC-related jobs in an appropriate way.

The transition of ATCOs from an operational job environment to an administrative or managerial one should be carried out following appropriate preparation, experience and / or training in order to avoid failures.

ATC is a highly specialised profession, in which the cost associated with training new recruits up to the standards for obtaining their ratings can become very high.

Instructors and developers of proficiency training programmes must have a solid background on facilities procedures and standard operating procedures. The quality of training given by retired ATCOs will deteriorate due to loss of actual experience.

6. Consultation and support. *Seniority constraints need to be taken into consideration in PCD approaches and concepts, and solutions need to be found which balance the disadvantages imposed by changes in career.*

An early start of PCD during the controller career, and a spread of development or continuation training in line with operational work and rating maintenance will help to alleviate the situation.

The benefits of having very experienced controllers available after retirement also helps to solve staffing problems in other sections (e.g. training) where otherwise active controllers need to be employed. This could prove beneficial in a controller shortage situation and / or in view of the fact that staff enjoying operational benefits and allowances are not easily attracted to other functions.

The quality of training given by retired ATCOs could deteriorate due to loss of credibility and actual experience in a permanently changing ATC environment.

7. PCD as an on-going process. Methods need to be available to keep track of any job changes or changes in the job / post requirements concerned, e.g. experience in ATC, prerequisite qualifications, prerequisite training and development before entering a post.

PCD planning via SP should be linked to overall staff planning at all levels to

- keep track of staff throughout their career(s);
- identify / forecast future staff needs in other jobs;
- plan events in the PCD process;
- replace / promote staff in a timely way;
- identify new needs created;
- identify additional requirements for external recruitment of new staff.

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ANNEX A: EXAMPLES OF ATC CAREER IN DIFFERENT STATES

Career and Remuneration

As was mentioned above, the career prospects of ATCOs, although diversified, are relatively limited. One of the means to indicate a career progress is through remuneration. Differentiation in gross annual remuneration (excluding bonuses) between

- trainees;
- fully qualified personnel;
- ATCOs whose rating or duties were changed;
- staff with certain years of seniority or age (e.g. over 35);
- tutors;
- instructors;
- chief instructors with non-operational positions;
- supervisors etc.

are justifiably perceived as an organisational recognition of career advancement. The qualitative demand of the task is an important part of the career and remuneration. Although base yearly wages are the same for ACC/ Approach Control (APP) and Aerodrome Control Tower (TWR), bonuses are sometimes higher and increase more rapidly for ACC/APP ATCOs. However, bonuses should (and in some countries do) depend on workload and strain, not on 'type' of ATCO.

ATCO Career Paths

In **France**, for example, controllers can be promoted to a certain rank and their bonuses will depend on that rank. Thus, there are

- *Ingénieur du contrôle de la navigation aérienne (ICNA) classe normale,*

- *ICNA principal* and

- *ICNA divisionnaire.*

In a given rank, progression from one grade to the subsequent first depends on seniority. ATCO promotion to a higher ICNA rank depends on the number of positions open in that rank and the ATCO seniority in the rank below.

ATCOs with *'ICNA classe normale'* rank move to grade two after one year on the job and then move up one grade (up to grade five) every two years. In order to be promoted to *'ICNA principal'* rank, one needs at least seven years seniority as *'ICNA classe normale'*, i.e. grade five. Then, the ATCO can move up one grade (up to grade nine) every three years. Controllers with *'ICNA principal'* rank move up on the grade scale (from two to nine) every three years. *'ICNA divisionnaire'* controllers move up one grade every two years

(from two to nine). Sixteen years seniority minimum are necessary to reach this rank (DNA, 1997). Figure 6 demonstrates this career advancement.

Normale | 2 | 3 | 4 | 5 | | 6 | | 7 | | 8 | | 9

Principal   2 | | 3 | | 4 | | 5 | | 6 | | 7 | | 8 | | 9

Divisionnaire   2 | 3 | 4 | 5 | 6 | 7 | 8 | 9

Figure 6:   The ICNA grade scale - Controller's career in France

Similar differentiation in bonuses exist in **German** airports depending on the category of traffic (e.g. category 3 in Frankfurt, category 1 in Berlin). In Germany the career end can be recognised by salary group 11 for operational staff and group 9 for a technical personnel.

In the **UK** ATCOs who are assigned to London Air Traffic Control Centre (LATCC) will be paid more than their colleagues assigned to Gatwick airport. The same in **Spain,** Madrid controllers will be paid more than Palma ones (see further details below). These differences are relevant, since a move between locations - accompanied by remuneration increase - may be perceived as a career advancement.

In **Italy** the career advancement is fairly structured. ATCOs have four grades. They start their career at the first grade. After two years on the job, the second grade can be accorded. The third grade is three years after the second and the forth one, four years afterwards.

Grades   1 | 2 | | 3 | | | 4

There are three levels in their career. They move up to the first level three years after obtaining their licence, to the second level four years later and to the third level four years afterwards.

Levels | | 1 | | | 2 | | | 3

Italian ATCOs advance in their career by functions, from approach, to radar and then to the control centre. ATCO wage progression depends on ratings (radar, non-radar). ATCO Bonuses can vary in relation to site assignment, duties, number of movements handled by the centre etc. (DNA, 1997).

Although many States will give special bonus to instructors, it is difficult to consider it as a career advancement. Usually, instructors are required to keep their controller status while exercising instructional duties. After (or between) the teaching phase they return to their operational positions.

If wage progression is of any indication to career advancement, then **swisscontrol** (Swiss air navigation services limited) offers 31 classification levels, each of which has a minimum and maximum annual salary. Controllers climb on the salaries ladder between classes 23 and 30. Wages increase

within each class and upon promotion to a new class, salary starts at the base level of the new class. In addition a seniority bonus is paid every 5 years.

Aeropuertos españoles y Navegación aérea in **Spain** (AENA, 1994) is a concrete example where there is a clear reference to the professional career of ATCOs. It states that this career "will unfold, among other procedures, through specialisation in areas of activity which follow from the performance of their duties...". The document clearly specifies areas of activities such as route structure and manoeuvres, flow control etc. and positions acceded to by merit examinations. It defines an ATCO career as the system to access to different posts for ATCOs. This career can be horizontal towards operational or technical jobs. It can also be vertical towards managerial openings.

In Spain there are eight professional groups, which depends on the traffic (number and quality of movements) and ten professional levels, where controllers can be promoted (see Table 1 below). The maximum professional level and the minimum number of years at each level are depending on the traffic group.

AENA (1994) established those ten professional levels, which can be attained as a function of time, the local authorisation exercised and the site where ATCOs perform their duties. According to this AENA-unions agreement signed on 10 June 1994, "professional level is deemed to be the degree of professional improvement attained by a controller as a function of time and the type of local authorisation exercised". Achieving professional levels may involve operational and non-operational duties. It means that the proficiency of controllers is based on their background in terms of years of handling traffic and qualifications.

Table 1:   Professional groups and professional levels at AENA

	Professional Level	I	II	III	IV	V	VI	VII	VIII	IX	X	years
Group												
A	Madrid ACC Barcelona ACC	1	1	1	1	2	2	2	2	2	3	17
B	Canarias ACC Sevilla ACC Palma ACC	1	1	1	1	2	2	2	3	3		16
C	Valencia ACC	1	1	1	1	2	2	3	3	4		18
:												
H	Fuerteventura TWR Vigo TWR Jerez TWR	1	1	2	4	4	4					16

Professional levels are consecutive, namely one level cannot be attained until the preceding level has been attained. The starting point for the career is the signing of a contract as an ATCO in training.

This interesting agreement between AENA and the representatives of the Spanish ATCOs not only describes the professional operational career of an

ATCO from its beginning to the end of the career, but also explains the other opportunities such as a technical or specialist career and a managerial career.

This multifunctional career (operational, technical and managerial) is a subject to periodic evaluations. Controllers can be removed from responsibility if they fail this evaluation. When ATCOs leave a managerial post and do not want to come back to the OPSroom, they have a possibility of leaving the system.

Examples for promotion or movements between operational, technical career are controller, instructor, chief instructor, supervisor, technical instructor, technical supervisor, Head of instruction / supervision, OPSroom supervisor, control tower supervisor (as a managerial post), Head of ATM management structure.

Career advancement can be carried out by internal promotion, e.g. after successfully passing a training course, or by a competition. Usually the professional level and the seniority are being considered.

Specialisation is an example of an opportunity to controllers to change their career and work outside the OPSroom in different operational or investigation projects. AENA offer different areas of specialisation, such as system automation operational analysis, operational database, sectorisation, traffic demand and system capacity, incidents analysis, setting simulation etc.

The career agreement is closely related to the reward system. There are rewards for meeting the number of movements an ATCO must face, and there are penalties for ATCOs who are unable to obtain the qualification for an operation post in a compulsory pre-defined period.

Retirement Age

The duration of a European controller's career varies. Different ATMOs have different minimum and maximum retirement age. Few examples are France (50-57), Germany (55, or 59 for data flight staff), Italy (60, or 40 years on duty, to maintain total remuneration, an ATCO must work at least 35 years and be at least 52 years old), Norway (65), Spain (52-65), Sweden (60), Switzerland (50-55) and the UK (55-60). In Finland it is 55 for those employed before August 1989 and 63 for those employed afterwards.

For other staff categories typical minimum and maximum retirement ages are in France (60-65 for electronic engineers and technicians), Germany (59 for data flight staff, 65 for the rest), Italy (65), Spain (60-65) and the UK (60).

On the operational career path, one can also mention the Air Traffic Flow Controllers. They are normally recruited from among experienced area radar controllers or tower / approach controllers at a major international airport. ATFM training is required followed by a series of tests and physical fitness criteria. In EUROCONTROL one uses the number of years of service combined with satisfactory performance as a basis for career advancement (EUROCONTROL, 1997).

An example for a career path for the ATFM service is provided below in <u>Figure 7</u> (source: EUROCONTROL, 1997):

Air Traffic Controller experience (2-25 years)
↓
Air Traffic Flow Controller (5 years)
↓
Air Traffic Flow Controller 1st class (6 years)
↓
Principal Air Traffic Flow Controller
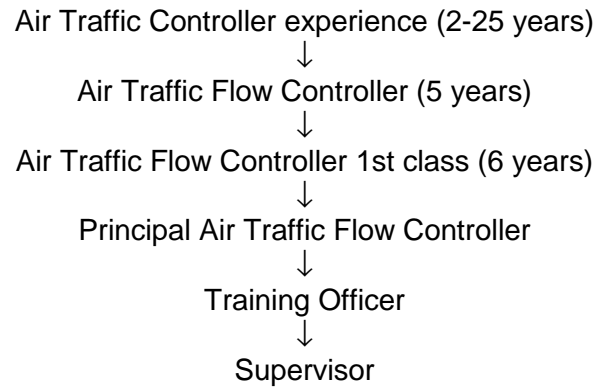↓
Training Officer
↓
Supervisor

Figure 7:   A career path for the ATFM service

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ANNEX B: MANAGEMENT DEVELOPMENT AT DEUTSCHE FLUGSICHERUNG (DFS)[7]

DFS attaches great importance to the career development and further qualification of its managers. The management development programme (*Führungskräfte Entwicklung in der DFS,* FKE) reflects this philosophy.

The programme is designed to identify prospective managers among the company's ranks and to develop their talents. Managers, and in particular their interaction with staff and customers, are considered to be the key factors determining corporate success.

The career development measures are based on the strategic guidelines of DFS and take account of future demands on managers.

The 'Human Resources' functional strategy is geared to the requirements of the individual DFS business areas. Demand-oriented and task-related qualification and training measures enable corporate objectives to be met.

The measures described in the following are tailored to the standards, values and demands of DFS. The programme focuses on "learning-by-doing" and seminars in order to obtain the greatest possible benefit for both the company and the managers. Establishing personalised goals and modules for the career development of every manager is a top priority in this context.

In order to successfully implement the programme, managers must actively support and monitor the career development of their staff. HR development is considered to be a managerial task, which cannot be delegated.

Purpose of the Management Development Programme

The DFS strategic guidelines for HR development are based on both needs and goals and provide the following framework:

"Our employees' knowledge and expertise guarantee safety and trustworthiness and promote entrepreneurial spirit – and hence ensure our corporate success. We are committed to performance, responsibility, efficiency and flexibility. Proper behaviour in our company is based on these values, and we reward such behaviour."

Programme Objectives
1. to enable managers to cope with rapidly changing future market requirements;
2. to support managers in their own development;

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[7] Based on DFS Deutsche Flugsicherung Human Resources Development and Planning (1999). *Management Development at DFS*, Version 2.0 September 1999.

3. to support managers in the development of their staff;
4. to develop the talents of prospective managers; and
5. to fill management positions.

Management Development Objectives

With its component-based structure, the programme aims to guarantee a systematic learning process, tailored to the requirements and tasks of each individual management level, and which succeeds in developing existing potential. The programme is designed to establish a corporate culture, which reflects entrepreneurial spirit and comprehensive thinking. Development measures are focused more on interpersonal (management) skills than on technical qualifications and aim to prepare managers for various functions rather than specific jobs:

1. To enable managers to cope with rapidly changing future market requirements

Teach managers to
- approach change proactively,
- plan strategically,
- think and work in a customer-oriented manner,
- take an entrepreneurial approach.

2. To support managers in their own development

Support managers in their personal and professional development by
- preparing them for changing tasks,
- helping them achieve sustained success through personalised development measures,
- creating management role models.

3. To support managers in the development of their staff

Prepare managers for their role as developers by
- supplying the necessary tools,
- providing the related instruction manuals and training courses,
- supporting them in day-to-day tasks.

4. To develop the talents of prospective managers

Take a systematic approach to developing managers
- from the company's own ranks,
- in the numbers dictated by demand,
- with a variety of profiles and experience.

5. To fill management positions

Fill management positions at DFS
- quickly and in compliance with objectives at all times,
- with suitable and qualified people, as determined in the assessment process.

This is done to broaden the qualifications of employees and to improve their potential and management skills in order to offer a wider range of job prospects in other areas within the company.

Management Development Principles

A conscious decision has been taken to invest in the company's managers and a considerable sum of money is set aside each year for development measures. Employees are released from their daily tasks – in some cases for a fairly long period of time - to participate in the programme.

The following principles describe the DFS definition of the selection of employees and their participation in the programme, and outline the demands and expectations of the programme as a whole and the expectations of participants.

The concept of "responsibility" in the strategy refers to each employee's accountability for the further development of his or her professional and personal skills. All employees and managers are called upon to develop their own initiative in exploiting the opportunities for further development provided by the programme. The programme generally requires efforts above and beyond each participant's day-to-day duties. They are expected to invest leisure time in certain programme components and personalised development measures. The following statements are made:

- "We want only those employees who demonstrate management potential to participate in the programme."
- "We will assign managerial responsibility only to employees who have completed the relevant development measures."
- "We do not automatically guarantee a management position after participation in the FKE programme."
- "We expect participants to take the initiative and act independently. Participants are responsible for their own career development."
- "We expect participants to demonstrate professional and geographic mobility as well as a high level of commitment."
- "We expect participants to be willing to invest leisure time in training measures."
- "We support only those managers who have supported their staff."
- "We generally develop measures for managers beyond their specific organisational units."
- "We encourage more prospective managers than are actually required. We aim to promote competition."
- "We set high performance standards and promote according to performance principles.
- "We strive for transparency and objectivity in all selection processes and development measures".

Leadership Values

The following information was taken into account when establishing the DFS leadership values:

- corporate principles;
- management and cooperation principles ;
- strategic principles and guidelines;
- organisational principles;
- guidelines for human resources policy;
- management and promotion system.

The leadership values give managers a frame of reference and represent the starting point for further development of the programme. In the selection and assessment processes, these values serve as a basis for determining skill profiles and defining selection criteria.

Values

Managers

- foster our corporate culture which is based on openness, honesty, tolerance of mistakes, ability to accept criticism, trust, and respect for one another;
- promote a balance between professional commitment and the private lives of themselves and their staff.

Entrepreneurs

Managers:
- identify with the company's objectives and tasks;
- are innovative and actively involved in making changes;
- act strategically;
- act in a cost-effective manner;
- are customer-oriented;
- are sensitive to social issues;
- are quality-conscious and results-oriented;
- assume responsibility, and
- take the initiative.

People

Managers:
- take a target-oriented approach;
- make decisions;
- consider the consequences of their actions;
- accept feedback and act accordingly;
- react flexibly to unexpected events;
- can work under pressure, and
- are always in command of the situation.

Interaction

Managers:

- are role models;
- act in accordance with our corporate values;
- practise situational leadership;
- are cooperative;
- agree on objectives and delegate tasks, responsibility and authority;
- regularly assess the performance and potential of their staff;
- actively promote the professional and personal development of their staff;
- include their staff in decision-making processes;
- provide their staff with comprehensive information on the tasks for which they are responsible;
- take a constructive approach to resolving conflicts;
- integrate differing opinions and interests into joint solutions;
- promote cooperation across organisational units, and
- act appropriately in intercultural situations.

Overview of the Management Development Programme

The overall management development programme is part of the DFS HR development and planning process and is intended to ensure that there are enough candidates available to fill management positions in company-wide SP.

- Separate Basic, Advanced, Professional and Executive phases are defined in order to ensure that professional development measures at each level of management meet requirements. The skills in each new phase build on those of the preceding phase. Establishing a uniform structure in each phase ensures that the overall development process is transparent and runs smoothly.

- The initial phase (see symbol ☐).concerns employees and managers who demonstrate management potential.

- An assessment (◇) is conducted afterwards, in which the following instruments are used to verify the employee's potential: appraisals, interviews, assessment centres (AC), etc.

- The development dialogue which follows examines the assessment's findings in order to establish the participant's qualification module (◯): a series of development measures, tailored to the employee's individual needs.

- Upon successful completion of the development programme, candidates are allotted to a pool (△) of eligible management candidates.

Candidates in the Basic pool are eligible for positions at **operational** management level (FKn). FKn managers and direct entrants may be eligible for the **Advanced** pool in the initial phase.

Candidates in the Advanced pool are eligible for positions at **management level 2** (FK 2). FK 2 managers and direct entrants may be eligible for the **Professional** pool in the initial phase.

Candidates in the Professional pool are eligible for positions at **management level 1** (FK 1). FK 1 managers and direct entrants may be eligible for the **Executive** pool in the initial phase.
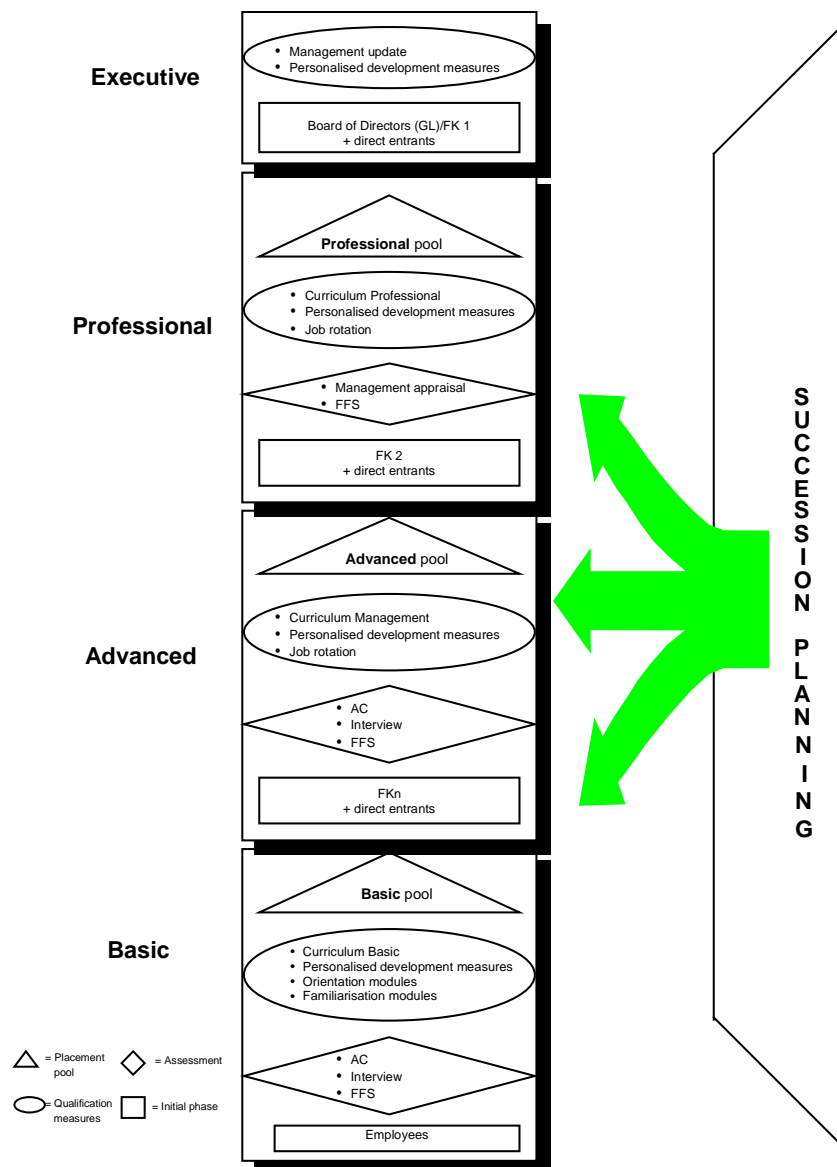

Figure 1: Overview of the DFS Management Development Programme

Management Basic

Management Basic prepares employees for an operational management position (watch supervisor (WL), supervisor - technical teams (TL-T), section head (SGL), instructor at the Academy, etc.).

The programme syllabus contains the following:

1. **Curriculum Basic**, which comprises several seminars over a period of two years and is compulsory for all participants.
2. **Personalised development measures**, derived from the assessment process, and which may include training units focusing on specialised skills, intercultural issues, specific projects, etc. They are defined in accordance with each participant's needs and specified in the development record.
3. **Orientation modules**, which include task-related, results-oriented collaboration in other organisational units of DFS or other companies / institutions. Participants gain knowledge of the overall situation in a defined region, within the company, or in other Air Navigation Services (ANS) organisations or projects. These modules are divided into two six-week tours.
4. **Familiarisation modules**, designed to introduce future managers to all key in-house and cross-functional activities. The personalised syllabus, duration and aims of each familiarisation module are defined by the ANS units and domains involved.

Upon completion of these measures, participants are assigned to the Basic pool and listed in a database as eligible to assume an operational management position.

Management Advanced

Management Advanced prepares prospective managers for an FK 2 position.

The programme syllabus is as follows:

1. **Curriculum Management (CF)** comprises four main parts of training and study: "Corporate culture and vision", "Business administration", "Management and communication" and "Team-building and personal development" (partly outdoor training). Participation is compulsory and extends over approximately 15 months.
2. **Personalised development measures** are derived from the assessment process and are designed to develop, as required, the management and methodological skills and personality-related and interpersonal skills, etc. of prospective managers. Where applicable, these measures may focus on specialised skills. The participant, his or her manager and a HR development advisor define personalised measures, which are then specified in the development record.
3. In **job rotation**, participants take on a temporary assignment in which they focus on tasks or activities in new subject areas (e.g. project management, participation in international committees, consultancy assignments, etc.). These modules provide participants with the opportunity to put their theoretical knowledge and experience into practice. "Learning-by-doing" is

especially important in these modules. The duration of the development module is defined as required in each individual case.

Upon completion of these measures, participants are assigned to the Advanced FK 2 pool and listed in a database as eligible to assume an FK 2 position.

Management Professional

Management Professional prepares FK 2 managers for an FK 1 position.

The programme syllabus contains the following:

1. **Curriculum Professional** is taught at the *Institut für Betriebswirtschaft* (Institute for Business Studies or IFB) at the University of St. Gallen and comprises six parts: "Management systems and decision-making methodology", "Management and team development", "Financial management and control", "Organisation and HRM", "Marketing", and "Strategic business management and ethics". Participation is mandatory and extends over a period of six months. Curriculum Professional focuses mainly on exchanging experience and team-based learning with managers from other companies.
2. **Personalised development measures** are derived from the findings of the management appraisal process and may include individual coaching, temporary placement at a DFS client or partner company, other training courses, etc. The measures are specified in the development record.
3. Within the scope of individually specified development modules **(job rotation)**, participants take on a temporary assignment in a new subject area. This may include project management, participation in international committees, changing from staff to line functions, switching from the management of small to large organisational units, secondment to EUROCONTROL or other foreign assignments.

Upon completion of these measures, managers are assigned to the Professional FK 1 pool and listed in a database as eligible for an FK 1 position.

Management Executive

Management Executive comprises two essential elements for members of the Board of Directors (GL) and FK 1 executives:

1. The **management update** deals with annually changing topics of focal interest, for example: "Corporate strategy and development", "Social policy", "Economics", "Business trends", etc. This module consists of workshops, presentations and discussions. The programme may, if required, include events such as the St. Gallen management seminar or the *Baden-Badener Unternehmergespräche* (Baden-Baden Management Round Table), etc.
2. **Personalised development measures** may include language training, intercultural training, media training and individual coaching.

ANNEX C: DEVELOPING AND IMPLEMENTING MANAGEMENT COMPETENCIES

National Air Traffic Services Ltd. (NATS) Experience[8]

In late 1995 NATS began the development of management competencies for their 85 senior managers.

Objective

The main objective of introducing management competencies was to facilitate management development within NATS to prepare managers for the future (e.g. privatisation).

Development Approach

NATS engaged a company to develop and design their competencies. This involved behavioural event interviews with a sample of 16 senior mangers. The competencies identified were then validated with a group of 4 managers and with the Executive Committee. This validation event confirmed the 10 competencies identified and added 2 more to include commercial and change focused. The design and development process took 4 months and was completed in February 1996.

The NATS Management Competencies identified and defined focus on business, people and results. The 12 competencies identified are as follows:

- analytical and conceptual thinking;
- commercial focus;
- external awareness;
- change orientation;
- customer orientation;
- influencing;
- providing clarity;
- managing people;
- team working;
- challenging complacency;
- achieving results;
- organisational awareness.

Critical Success Factors

The following factors NATS consider critical to the development of their management competencies:

- In-house Champion – Steering Committee - include cynics.

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[8] Based on a report of Ms Úna Mellett (EUROCONTROL, DIS/HUM) on a meeting with Mr. Philip James, NATS on 2nd August 1999 within the context of Leadership Management and Organisation (LMO) EATCHIP adaptation.

- Keep it simple – not useful to include negative indicators.

Integrating Competencies with other HR Processes

The first step to embedding the competencies defined was focused on management development. A 3-day workshop was held to develop action plans for each participant and to validate further the competencies identified and defined. NATS used 360° tool to facilitate the development of action plans. They engaged an external consulting company for this process. The steps involved were as follows:

- designing 360° questionnaire (related to competencies identified);
- sending 360° form to managers (4 weeks notice) to be completed by the manager, 2-3 peers, and 2 subordinates;
- completed forms send to independent third party – i.e. the consultancy
- workshop – outcome Action Plans for each manager and one-to-one coaching;
- development programmes set up;
- action learning – included partnering with external companies to learn from their experiences;
- work shadowing – secondments to private companies e.g. Virgin etc;
- courses.

Critical Success Factors:

minimum time to complete 360° form - 4 weeks;

having an independent third party to assess completed 360° form – neutral;

- one-to-one coaching provided to all managers (1 hour per manager);
- keep the 360° form simple;
- seen as a pilot.

The management competencies are integrated into NATS development centres and AC activities. Competencies are not linked to pay.

An information technology tool - which is a guide to help managers identify what they needed to do to develop different competencies - was also developed.

Competencies are maintained within the HR development function.

Further Extensions

In 1997 NATS extended the framework to middle and junior managers (1000 staff members). Introducing these two levels helped validate and crosscheck competencies identified for senior managers.

NATS are currently in the process of launching promotional material, as the management competencies are now more stable having gone through the various validation stages. There is a low risk in introducing material at this stage, as most managers are now familiar with the management competencies.

Overall Benefits to NATS

The following are the benefits to NATS following the introduction of management competencies:

- cultural change;
- strategic focus;
- readiness for privatisation;
- common language;
- providing an improved management development focus on things that make a difference;
- positive effects of learning for each other and from external companies;
- preparedness for competing in a more commercial environment.

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ANNEX D: RELEVANT POLICIES OF IFATCA RELATING TO PCD

Addressing properly the ATC career challenges also means understanding the relevant concerns of staff social partners and representatives and their financial implications. The following is an extract from the IFATCA Manual[9]

Managerial Policy

Sub-chapter 41-A2 of the "Model of Employment Agreement" attached to the IFATCA manual concerned with "Managerial Policy" states that "the employer undertakes to only employ managers who hold ATC licences in positions directly concerned with executive ATC matters".

Loss of Licence

In the case of "Loss of Licence" Sub-chapter 10 on "Employment Security" states that "if the employee is employed at a lesser salary with the same employer or outside ATS, then the loss of income should be recompensed".

(I) "In addition to the Loss of Licence Insurance, where employees are forced to retire before reaching the normal retirement age, the employer will provide

- a retraining programme for another career at no cost to the employee, for up to _ years, during which the normal ATCO salary will be paid;

- following retraining, provide the employee with employment in the field for which the retraining was provided, and maintain the remuneration at the appropriate ATCO rate until normal ATCO retirement age is reached;

- where the employee is unable to undergo such retraining, or incapable of employment in any occupation, the employer shall maintain remuneration at ATCO level until the normal ATCO retirement age is reached;

- if the employee chooses to not undergo retraining or be employed with the employer outside the ATC area, then a sum equal to five years at the appropriate ATCO salary shall be provided as a lump sum". (41 A6)

Extended Duty

Sub-chapter 5.3.1 of the IFATCA manual refers to "Extended Duties". Individual ATCO who wish to remain in active duty, once they have met the conditions to retire, should be allowed to do so provided they meet all medical and proficiency requirements.

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[9]IFATCA, (2000). *International Federation of Air Traffic Controllers' Associations (IFATCA) Manual.* B. Ruethy: Fraubrunnen, Switzerland.

Sub-chapter 6.1.1 states that "throughout their careers, ATCOs are exposed to the constant risk of losing their licence and / or qualifications on grounds of medical or technical incapacity. This chapter continues as follows:

To avoid the risk of loss of licence and / or qualifications, ATCOs should be provided with adequate measures at the employer's expense such as the availability of appropriate medical services, physical fitness programme, training facilities and refresher training to assist the ATCO in maintaining the required health and skill standards.

Since the number of suitable and meaningful posts for re-employing the ATCO within the civil service is rather limited in view of their specialised backgrounds, training and experience, employers should provide loss-of-licence compensation schemes and second career programmes for ATCOs.

Where ATC is run by a private company, such establishment is even more important since re-employment possibilities are thus even more difficult to obtain.

Opportunities for re-training and redeployment, with compensation for loss of income, should also be available to ATCOs who lose their licence".

Supervisory and Management Courses

Sub-chapter 5.4.1. on "Supervisory and Management Courses" recommends that "Controllers who are charged with responsibility for indoctrination or on-the-job training of ATS personnel should be provided with adequate courses of instruction in order to discharge these additional responsibilities". (p. 4352)

Sub-chapter 5.4.2. states that "Prior to appointment to a supervisory or management position, controllers should be provided with suitable supervisory and management courses which meet the requirements of the new position".

Sub-chapter 5.4.3 continues on this issue: "Career development courses should be provided on a programmed basis to prepare controllers for non-operational ATC management positions".

Finally sub-chapter 5.4.4. adds that: "Controllers should also be provided the opportunity to take courses which will prepare them for employment on other duties in the government service and, if requested by the controllers, for employment outside the government service".

Retirement Schemes

Chapter 9 refers to "Retirement and Pension" and states that "To recognise the unique demands of the ATCO profession, employees should retire earlier than the normal (for the country) retirement age, shall receive benefits at not less than the same level enjoyed by normal age retirees in other professions".

Sub-chapter 5.1.4, "Retirement" recommends that for ATCO the age of retirement should be between 50 and 55. (p. 4151)

Regarding early retirement Sub-chapter 5.2.1 states that "there should be a possibility to cease from active control before controller retirement age". Sub-chapter 5.2.2 continues "ATCOs leaving active control, but staying in employ within the ATC environment should keep their controller retirement privilege".

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GLOSSARY

For the purposes of this document the following definitions shall apply:

Air Traffic: All aircraft in flight or operating on the manoeuvring area of an aerodrome (ICAO Doc 9569 Definitions).

Air Traffic Service (ATS): A generic term meaning variously, flight information service, alerting service, air traffic advisory service, ATC service (area control service, approach control service or aerodrome control service). (ICAO Doc 9569 Definitions).

Area Control Centre (ACC): A unit established to provide ATC service to controlled flights in control areas under its jurisdiction.

Career: The sequence of a person's work-related activities, behaviours, associated attitudes, values and aspirations over the span of one's life (McMahon and Merman, 1987).

Career Development: The outcomes of actions on career plans. The outcomes that are pursued may be based on the needs of the organisation and / or the individual (Storey, 1979).

Career Identity: The extent to which career is central to one's identity.

Career Insight: The extent to which an individual has realistic career perceptions about oneself and the organisation.

Career Management: An ongoing process of preparing, implementing, and monitoring career plans undertaken by the individual alone or in concert with the organisation (McMahon and Merman, 1987).

Career Path (or Career Ladder): A structured series of predetermined on-the-job experiences which result in movement up a hierarchy (McMahon and Merman, 1987).

Career Planning: A deliberate process of becoming aware of self, opportunities, constraints, choices, and consequences; identifying career-related goals; and "career pathing" or programming work, education, and related developmental experiences to provide the direction, timing, and sequence of steps to attain a specific career goal (McMahon and Merman, 1987).

Career Resilience: The ability to overcome career setbacks.

Culture: A system of beliefs, values, customs and institutions shared and transmitted by members of a particular society, from which people derive meaning for their work, love and leisure activities (Peterson, et al. 1991).

Human Resources Management (HRM): The conscious and specific direction of effort towards the quality of the workforce in the short and long term. It involves all processes and activities aimed at managing the HR of an organisation: MP, recruitment, training and development and career management.

Job: A group of a certain number of core tasks, direct support tasks and indirect support tasks which require a certain level of abilities, knowledge and skills.

Licence: An ATC licence indicates a controller's qualifications and includes a record of his/her competence at a particular unit together with his/her medical classification.

Manpower: The total supply of individuals available and qualified for service.

On-the-Job Training (OJT): The integration in practice of previously acquired job-related routines and skills under the supervision of a qualified coach in a live traffic situation.

The training enables student controllers to checkout as operational controllers at a specific operational unit.

Operational Controller: The holder of a certified qualification which permits the individual to control air traffic at a specific operational unit.

Operational Staff: The staff working in the operational environment of ATS comprising ATCOs, flight data assistants, flow managers, operations room supervisors and ATS support staff.

Personal and Career Development (PCD): The systematically planned, designed, implemented and controlled identification and promotion of abilities, skills, attitudes and knowledge of employees in line with the individuals' expectations and needs whilst taking account of changes in jobs and tasks.

Shift: The time of day on a given day that an individual or a group of individuals are scheduled to be at the workplace (Tepas and Monk, 1987)[10].

Shift Roster / Shift Schedule: The sequence of consecutive shifts and off time assigned to a particular individual or group of individuals as their usual work schedule.

Standby Duty: A period during which, by prior arrangement, controllers are required to be available to report at their workplace with the intention of providing an ATC service[11].

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[10] Tepas, D. I. and Monk, T. H. (1987). Work Schedules, in: G. Salvendy, (Ed.) *Handbook of Human Factors*, Chapter 7.3, p. 819-843. New York: John Wiley and Sons.

Task: A piece of work, performed by an individual or individuals, which has a definite beginning and end, and results in a product or a service.

Team: A team in ATS is a group of two or more persons who interact dynamically and interdependently with assigned specific roles, functions and responsibilities.

Teamwork: Group effort applied to work.

Training: The planned systematic development of the knowledge, understanding, skill, attitude and behaviour pattern required by an individual in order to perform adequately a given task or job.

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[11] After: Cooper, M.G. (1997). The Regulation of Air Traffic Controllers' Working Hours, In: The Royal Aeronautical Society, *Fatigue and Duty Limitations - An International Review*, 16 September 1997, London: The Royal Aeronautical Society, p. 2.8.

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ABBREVIATIONS AND ACRONYMS

For the purposes of this document, the following abbreviations and acronyms shall apply:

AC	Assessment Centre
ACC	Area Control Centre
AENA	*Aeropuertos españoles y Navegación aérea* (Spain)
ANS	Air Navigation Services
APP	Approach Control
ATC	Air Traffic Control
ATCA	ATC Assistant
ATCO	Air Traffic Controller / Air Traffic Control Officer
ATFM	Air Traffic Flow Management
ATM	Air Traffic Management
ATMO	Air Traffic Management Organisation
ATS	Air Traffic Services
ATSA	Air Traffic Services Authority (of Bulgaria)
CAA	Civil Aviation Administration
CFMU	Central Flow Management Unit (EUROCONTROL)
CIP	Convergence and Implementation Programme
CNS	Communications, Navigation and Surveillance
DFS	*Deutsche Flugsicherung GmbH* (Germany's navigation service provider)
DIS	Directorate Infrastructure, ATC Systems and Support (EATMP)
DNA	*Direction de la Navigation aérienne* (France)
EATCHIP	European Air Traffic Control Harmonisation and Integration Programme

EATMP	European Air Traffic Management Programme
ECAC	European Civil Aviation Conference
EFQM	The European Foundation for Quality Management
ENAC	*École nationale de l'aviation civile* (France)
ERS	Early Retirement Scheme
ET	Executive Task
EUROCONTROL	European Organisation for the Safety of Air Navigation
FAA	Federal Aviation Administration (US)
FFS	*Führungs und Förderungs System* (DFS), (Leadership and promotion system)
FKE	*Führungskräfte Entwicklung in der DFS,* (Management development programme) (DFS)
HR	Human Resources
HRM	Human Resources Management
HRS	ATM Human Resources Management Programme (EATMP)
HRT	Human Resources Team (EATMP)
HUM	Human Resources Domain (EATMP)
IANS	Institute of Air Navigation Services (Luxembourg)
ICAO	International Civil Aviation Organisation
ICNA	*Ingénieur du contrôle de la navigation aérienne* (France)
IFATCA	International Federation of Air Traffic Controllers' Associations
ISO	International Standards Organisation
KSAO	Knowledge, Skills, Abilities and Other personal requirements
LATCC	London Air Traffic Control Centre (UK)
LMO	Leadership Management and Organisation (EATCHIP)

LVNL	*Luchtverkeersleiding Nederland* (ATC The Netherlands)
MP	Manpower Planning
MSP	HRS Manpower Sub-Programme (EATMP)
NATS	National Air Traffic Services Ltd. (UK)
OJT	On-the-Job-Training
OJTI	On-the-Job-Training Instructor
OPS	Operations
OPSroom	Operational Room
ORs	Operational Requirements
PCD	Personal and Career Development
R & D	Research and Development
REP	Report
ROI	Return On Investment
SATORI	Systematic Air Traffic Operations Research Initiative (US)
SDE	Senior Director Principal EATMP
SME	Subject Matter Experts
SP	Succession Planning
ST	Specialist Task (EATCHIP)
TQM	Total Quality Management
TRM	Team Resource Management
TSP	HRS Training Sub-Programme (EATMP)
TWR	Aerodrome Control Tower
VS	Vocational Stabilisation

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