WORLD METEOROLOGICAL ORGANIZATION

GUIDE TO PRACTICES FOR
METEOROLOGICAL OFFICES SERVING AVIATION
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CHAPTER 7

ENHANCING CUSTOMER SATISFACTION

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7.1 INTRODUCTION: THE NEED TO BE CLOSE TO THE CUSTOMER

7.1.1 There has been a long and close relationship between meteorologists and the aviation community. Many meteorological services were established or grew to serve the needs of aviation when it rapidly expanded in the middle of the twentieth century. When forecasters, briefers and pilots rubbed shoulders every day at the airport, relationships were automatically close between provider and user.

7.1.2 Times have changed. With centralization and automation, there is often no longer such day-to-day contact. The technology revolution means that much of the information needed by users can be sourced without it appearing to even come from the local National Meteorological or Hydrological Services (NMHSs). Aviation users are more demanding, and NMHSs are stretched in providing many services to a much broader user community.

7.1.3 There is a need to enhance the close relationship between provider and user, to ensure that users' needs are being met, and for both to better understand the capabilities, limitations and requirements of each other.

7.1.4 A closer relationship can enhance the satisfaction of the aviation users, who feel that the provider cares, who appreciate having their needs listened to and addressed, who will thereby receive a higher quality of service, with benefits in both safety and efficiency, who have a better understanding of how services can be and are provided, and of the significant overall infrastructure which is required to support their needs.

7.1.5 The closer relationship can also very much benefit the provider, through having more satisfied customers who appreciate the services provided-rather than seeking alternative providers and/or lower costs, through higher job satisfaction when the staff know through interactions and feedback that their efforts are valued and their services "make a difference", and through a deeper understanding of the needs of the industry which stimulates the desire and determination to provide an even better quality of service.

7.1.6 This chapter discusses a number of ways to enhance user satisfaction. The next two sections cover liaison with aviation users, and examples of how service delivery can be enhanced. The third and final section covers the subject of quality management, which is highly relevant to enhancing user satisfaction.

7.2 CUSTOMER LIAISON AND CONSULTATION

7.2.1 It is the responsibility of the manager of a meteorological office serving aviation to set the tone, and emphasize the importance that should be attached to working closely with customers. This is true whether or not the office is located at an aerodrome, and probably even more important if it is not.

7.2.2 In particular, the manager should develop close and friendly working relationships with the airport management, the ATS and communications services, airline personnel and aircraft crews. The establishment of similar close relations between these aviation interests and the forecasters and other staff of the meteorological office should be encouraged. The manager should impress upon the meteorological staff the value of a good understanding of aircraft operations and the

operational point of view in making fully effective the meteorological service they provide and in maintaining close cooperation with aviation interests.

7.2.3 When the office is at the aerodrome, and near to aviation operational areas, there should be many opportunities for the manager and staff to interact with the customers on a daily basis. At many aerodromes, especially the larger ones, the aerodrome authorities will establish one or more committees on which user interests and all sections supplying services in the aerodrome are represented. Such committees provide a very useful forum to learn about proposed developments on the aerodrome. They also enable the users to bring to notice any apparent defects in the meteorological service and for the manager to make constructive proposals about how the meteorological service may be improved.

7.2.4 The manager can take the lead in setting up additional, appropriate ways to interact with customers in either a formal or informal setting. Some of the more informal ways include:

- A familiarization flight programme: provided that security conditions allow them, familiarization flights where staff travel on the flight deck can be a valuable insight into the weather issues faced on a day-to-day basis by a flight crew, as well as giving the staff the opportunity to explain to the crew what they do, and discuss the challenges of observing and forecasting the weather.

- Visits to air traffic control centres: this provides staff with a deeper understanding of the weather issues of air traffic control and management.

- Visits to flight operations centres: staff can thereby see the ways in which their information is used for flight planning and briefing.

- Participation in pilots' refresher courses: staff and pilots can exchange views on meteorological products and services, consider incidents involving meteorology, and discuss possible improvements to the provision of meteorological services.

- Involvement in general aviation or sporting aviation events (e.g. ballooning or gliding): often at such occasions it can be mutually valuable to have a staff member provide on-site weather interpretation, forecasting and briefing. A policy will need to be established on which events are supported and whether any costs are recovered, or else the demand could overwhelm resources.

- Visits to the meteorological office: aviation customers (representatives or airlines, of the CAA, of ATC, flight crew, briefers, planners, general aviation) can visit to see the forecast (or observing) operations, which aids their own understanding of the forecasting process, and of the infrastructure required to support services.

7.2.5 More formal, multilateral, liaison and consultation meetings should be organized together with representatives of the aviation customers. They should be regular-at least one a year, and maybe more frequently if the group determines this is needed. The meeting provides a forum to discuss the latest developments from both the customer and provider viewpoint, to review the quality of services, to review and update service specifications, and to cover matters such as recovery of meteorological costs from aviation users and other policies. With regard to cost recovery, consultations should include both the requirements and costs of facilities and services needed to serve exclusively aeronautical requirements and the fair share of the facilities and services required to serve both aeronautical and non-aeronautical requirements.

7.2.6 In addition to multilateral meetings, there can be regular formal visits to individual airline customers and air traffic services providers. Such visits can be by the manager or a designated contact person, and provide the opportunity to discuss on a one-to-one basis any issues

concerning the supply of meteorological services. This provides an effective means of focusing on matters of particular interest to individual customers, such as icing and turbulence over particular areas, or fog at specific aerodromes. Such one-to-one relationships can greatly assist providers in being able to respond rapidly to changes in the meteorological requirements of customers.

7.2.7 An important part of the overall interaction with the customers is for there to be feedback on the quality of services provided. Operators and other users should be encouraged to bring to the attention of duty staff any shortcomings in the meteorological service as soon as they become evident. When a complaint is made, the senior member of staff on duty should attempt to resolve the problem without delay or, if a solution is not readily available, refer the problem to the manager.

7.2.8 Any complaints should be formally recorded in a register, together with details of any action taken, any further investigations undertaken, and recommendations for improvements resulting from the incident. It is important that the complaint be "closed off" in the sense that a response is given to the customer explaining what occurred and what is being done about it. The customer will appreciate being advised, and the fact that the action is being taken to improve things. Conversely, if no response is given, the customer will be left feeling even more unhappy.

7.2.9 Compliments should also be formally recorded in a way known to all staff, particularly those in operations; such feedback is always valuable. It is worthwhile to routinely analyse compliments and complaints to look for trends.

7.3 ENHANCED SERVICES

7.3.1 This section considers the options for enhanced services over and above those specified in the WMO *Technical Regulations,* Volume II.

7.3.2 Strictly speaking, the WMO *Technical Regulations,* Volume II cover services only for international aviation. However, as has been covered in previous chapters of this *Guide,* these definitions form the basis for services to domestic aviation as well. Similarly, strictly speaking, the ICAO and WMO provisions for cost recovery refer only to the recovery of costs for services to international aviation, but do provide the basis for how overall cost recovery can be implemented.

7.3.3 It is fundamental to any enhanced service provision, above that provided for in the WMO *Technical Regulations,* Volume II that there be consultation and agreement on both the definition of what those services entail and how they are to be paid for.

7.3.4 In the case of services or enhancements that are generically available to all aviation customers, this should be a topic for discussion at meetings of the kind referred to in paragraph 7.2.5 above.

7.3.5 In most countries, services which are tailored to the needs of individual customers tend to be provided by the private sector who "add value" to generic information which is already widely available. However, subject to agreement with individual customers (e.g. following meetings of the kind referred to in paragraph 7.2.6 above), and given transparent and open costing and pricing to comply with competition law, it should also be possible for NMHSs to provide similar enhanced services to individual customers on a commercial basis.

7.3.6 Some possible enhanced services which could be provided either generically or to suit the needs of individual customers include:

- SIGWX and upper charts for flight documentation which cover specific areas not corresponding to the standard WAFS chart areas, but which may be more suitable for regional and domestic flights. (Note that the production and provision of such charts will be

enhanced by having both SIGWX and upper wind and temperature information available from the WAFCs in digital form rather than as charts.)

- Computer-based systems which package and deliver flight documentation to suit individual flights and/or routes as specified by airline customers.

- National products and services to meet the specific needs of air traffic services -for example: frequently undated systems which may need to be routed around; aerodrome forecasts tailored to specific thresholds for individual aerodrome; the provision of information from lightning networks to ATS; very-short-range forecasts for aerodromes in novel formats rather than using TREND or TAF.

- Services tailored to meet the specific, agreed needs of general or sporting aviation (e.g. in support of gliding or ballooning).

7.4 QUALITY MANAGEMENT

7.4.1 Introduction

7.4.1.1 From November 2001, ICAO Annex 3/WMO *Technical Regulations* [C.3.1.] has contained new provisions relating to quality management. In section 2.2 [C.3.1.], these recommend that the designated Meteorological Authority "establishes and implements a properly organized quality system" and that it "should be in conformity with the ISO9000 series of quality assurance standards, and certified by an approved organization".

7.4.1.2 It is important to recognize that, at present, this is only a recommendation ("should") and does not have the status of a standard ("shall"). Nonetheless, it represents a clear desire for the use of quality systems to ensure the quality of meteorological services for international aviation.

7.4.1.3 WMO is in the process of establishing the WMO Quality Management Framework (QMF), intended to provide guidelines and recommendations applicable to the development elements of quality management for operations at national and international levels. The QMF was also to address the enhancement of quality and efficiency of services delivery, taking into account end-user requirements. It was to be based on the comprehensive and hierarchical set of documented WMO procedures and practices, and include management systems to direct and control both basic and specialized services provided by NMHSs with regard to quality of meteorological and related data, products and services.

7.4.1.4 Furthermore, guidance on quality management is expected to be produced jointly by WMO and ICAO.

7.4.1.5 Therefore, the purpose of this section is to provide some background and principles on the matter of quality management, pending the production of additional, specific, guidance material. The information will refer to the ISO9000 series of standards, not because these are the only ones that can be applied, but because the concepts are generic to whatever quality management approach might be taken by an NMHS

7.4.2 Principles

The ISO9000 series of standards refers to the following eight key principles for quality management, which have been phrased here in the context of an NMHS.

(a) Customer focus

NMHSs need to understand the current and future needs of their users or customers who receive their services. This includes internal customers.

(b) Leadership

The top management of the NMHS, particularly the chief executive or director, needs to clearly establish the direction of the NMHS and establish an environment where all staff are encouraged to work towards that direction and the objectives of the NMHS.

(c) Involvement of people

People at all levels are the essence of an NMHS and their full involvement enables their abilities to be used for the benefit of the NNHS.

(d) Process approach

Activities and related resources of the NMHS need to be managed as processes. They are of different kinds: operational, scientific or administrative. They exist only because there are expectations to fulfill in order to gain the satisfaction of a customer.

(e) System approach to management

Identifying, understanding and managing interrelated processes as a system contributes to the NMHS's effectiveness and efficiency in achieving its objectives.

(f) Continual improvement

Continual improvement of the NMHS's overall performance should be a permanent objective of the NMHS.

(g) Factual approach to decision-making

Effective decisions are based on the analysis of data and information. They should never be based on unsubstantiated beliefs or suppositions.

(h) Mutually beneficial supplier relationships

The NMHS and its suppliers are interdependent and a mutually beneficial relationship enhances the ability of both to create value.

7.4.3 Benefits of quality management

The eight key principles in the previous section conform in many ways to modem management practice, directed towards ensuring that an NMHS is well managed, and providing a good customer service. Application of such principles should have the following objective benefits:

- Compliance with legal and statutory requirements (e.g. ICAO Annex 3/WMO *Technical Regulations* [C.3. 1.];

- Determination of users' requirements in addition to their statutory requirements;

- Ensuring customers' expectations are satisfied;

- Meeting contractual obligations;

- Aligning activities with the corporate vision;

- Taking effective corrective action when processes fail or preventive action when they look likely to fail;

- Continually improving performance.

7.4.4 How to embark on quality management

The experiences of those NMHSs that have already implemented quality management suggest the following series of steps to work toward quality management within other NMHSs.

7.4.4.1 *Obtain commitment of the director or chief executive:* A formal and strong commitment from the top managers is essential. This needs to be a real commitment and not lip service, since resources will need to be allocated and staff at all levels will be looking to managers to see that they are committed to the process.

7.4.4.2 *Appoint a quality manager and set up a project structure:* The best way to set up a quality management system is to manage it as a project. This requires, of course, the designation of a project manager, of a project team and of a managing committee. This committee should be headed by the chief executive or director. It can be of some help to include working-level staff on the committee. The entire staff of the NMHS should be considered to be involved on the project team.

7.4.4.3 *Secure a financial commitment:* Financial resources will be needed for the implementation of a quality management system.

7.4.4.4 *Increase workforce awareness about quality management:* The best way to overcome any personnel resistance, and to obtain commitment, is to meet all the workforce, and to improve the common awareness about issues such as risks associated with the lack of mastering activities, the current competitive environment, and not retaining the customers' confidence in products, as well as the benefits of efficiency and effectiveness which can come from quality management approaches. It can be very useful among the meteorological community to go through this step: meteorologists in general are understandably proud of their profession, find themselves far away from commercial competition, and as scientists may not consider the need to improve their efficiency at work.

7.4.4.5 *Select a consultant to guide the process:* A community of meteorologists cannot and need not transform itself into quality specialists. Specialist consultancy support will assist in the development of a quality management system, although it is important to recognize that the system must be "owned" by the NMHS and its staff, and not the consultant.

7.4.4.6 *Determine the quality system framework and appoint quality representatives from various work areas:* Any quality system will require a number of building blocks, including the

establishment of a quality manual and a framework for documentation of procedures, linkages to existing documentation (including WMO manuals and guides), establishment of quality records, etc.

7.4.4.7 *Undertake quality system training:* All staff should have some degree of quality system training, with more intensive training for the quality representatives, management and those involved in internal auditing.

7.4.4.8 *Review existing processes and documentation, and/or create new documentation:* Quality management involves a process-oriented view of the organization. Many organizations may already have a mature set of processes and documentation, which may make this step relatively straightforward. What is needed is to analyze each process and describe it in a standardized format; review and/or create ad hoc documentation; and provide personnel with ad hoc documentation.

7.4.4.9 *Set up the quality* loop: Quality management involves a "plan-do-check-act" cycle aimed at continuous improvement. Quality indicators should be established, together with fault procedures and a "corrective action register" to ensure that any problems or customer complaints are properly dealt with and the system is improved. If necessary, the operating mode of procedures should be amended to allow this.

7.4.4.10 *Train internal auditors and audit the system: A* subset of staff should be trained in how to conduct internal audits of the quality system, and should then carry out a series of audits, initially under the supervision and guidance of the consultant. Audits should be seen as opportunities to improve the system, rather than investigations where someone is trying to catch you out and you don't want to get caught.

7.4.4.11 *Improve the working documents:* Based on the results of the internal audits, and of the experience to date, the working documents and processes should be improved.

7.4.4.12 *Certification audit:* At this point, if desired, the organization should be at the stage of seeking quality certification by some external agency.