



WORKING PAPER

**CONFERENCE ON THE ECONOMICS OF AIRPORTS AND
AIR NAVIGATION SERVICES**

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Agenda Item 3: Specific issues related to air navigation services economics and management
Agenda Item 3.3: Cost allocation and charging systems

INCENTIVES THAT COULD APPLY TO BOTH PROVIDERS AND USERS

(Presented by the Secretariat)

SUMMARY

This paper discusses the appropriateness of incentives for both air navigation services providers (ANSPs) and users. If properly designed, incentives may be a tool to optimize the use and delivery of air navigation services, reduce the overall cost of such services, and increase their efficiency. To achieve a desired outcome from the application of incentives, the paper concludes that States should ensure that incentives meet the principles set out in *ICAO's Policies on Charges for Airports and Air Navigation Services* (Doc 9082), as well as their stated objectives, and that the estimated benefits offset the cost of incentives within a reasonable timeframe. An amendment of the related text in Doc 9082 and the development of guidance on incentives are proposed to substantiate this conclusion.

Action by the Conference is in paragraph 5.

1. INTRODUCTION

1.1 The term incentive refers to an instrument that incites a particular course of action. In economic activities, the most common form of incentive is a financial or remunerative incentive, i.e some form of financial reward (or penalty) in exchange for a particular action. A regulator could use a financial incentive, within its economic oversight function and through the consultation process, to encourage an air navigation service provider (ANSP) to improve its performance. An ANSP could also use a financial incentive through its charging mechanism to encourage users to act in ways that will lead to the desired outcome.

1.2 This paper discusses the appropriate use of incentives for both ANSPs and users. It also reviews the current relevant text of *ICAO's Policies on Charges for Airports and Air Navigation Services* (Doc 9082). It should be mentioned that many aspects related to differential charges offered by airports, which are dealt with in WP/10, are also applicable to incentives provided by ANSPs for users.

2. DISCUSSION

2.1 The basic objectives of introducing incentives for ANSPs and users are, *inter alia*, to optimize the use of air navigation services, reduce the overall costs of these services, and increase their efficiency. When establishing incentive schemes, such objectives should be clearly defined and stated, and should be measurable in a quantitative manner.

Incentives for ANSPs

2.2 Some forms of economic oversight are designed to encompass incentive elements within them. The archetypal example is price cap regulation, under which the regulator sets a maximum chargeable price applicable for a specific period, normally by using the retail/consumer price index minus an incentive target (an "x" factor). If the ANSP exceeds the target, it may keep any over-recoveries. Where the target is not met, the ANSP would not be allowed to increase charges to compensate for the under-recovery and would have to find the means to balance its accounts during the regulated period. Under this scenario, the ANSP has a strong incentive to improve its efficiency and reduce its costs¹.

2.3 Ideally, an incentive "x" factor should be incorporated into the ANSP's performance management process. Performance targets for some of the key performance areas (KPAs) such as productivity and cost-effectiveness can be set through the introduction of an "x" factor. Another KPA, quality of service, is not directly related to an "x" factor, but would need to be closely monitored because incentives for cost reduction might result in a reduction in the quality of service. To assess whether incentives have a positive impact on performance, regular reviews of performance reports should be conducted by regulators, in cooperation with users and other interested parties (see WP/5).

2.4 However, incentives are not necessarily compatible with the full cost recovery principle, which means by definition that the ANSP should recover all its costs through charges. Within the full cost recovery principle, any penalty applied to the ANSP would have to be considered as an extra cost, which would then have to be charged back to the users. As a consequence, any incentive effect would be lost. Conversely, any reward granted to the ANSP would have to be considered as surplus income, which would then have to be passed back on to the users through a decrease in charges if an adjustment mechanism was in place.

Incentives for airspace users

2.5 Incentives would provide users with the opportunity to incur or bear financial advantages or disadvantages depending on the decisions made. In the context of air traffic management (ATM), three types of incentives might be provided for users, according to different time horizons.

¹ The price cap regulation has some potential shortcomings. For example, since a price cap is usually set for several years on the basis of projected capital expenditure as well as on existing assets, an ANSP would have an incentive to overstate capital expenditure prior to the price cap being set and subsequently, not to undertake the full programme (the price cap can give the provider a short term return on the assets without actually having to invest in them). Also, if the ANSP anticipates that the regulator will adjust the terms of the price cap, then its incentives for efficiency will be substantially reduced. This is because the degree of incentives depends on the ANSP's belief that the benefits of its cost reduction efforts, more efficient pricing and adopting new technologies will not result in a tightening of its price cap (a large x).

2.6 The first type of incentives for users would affect their tactical or operational decision at the level of each flight in terms of timing, routing or flight profile. Although tactical decisions are currently made without consideration of any financial transactions, it is conceivable that, for example, in a congested airspace, some users would be willing to accept additional costs (for delayed departure, or non-optimal profile or speed) in exchange for a financial reward. Such incentives might be appropriate if they result in lower overall costs, i.e. if the incentives granted to some users and the overall cost of the resulting inconvenience is less than the overall cost of the inconvenience that would otherwise be incurred without the incentives.

2.7 The second type would target the demand for ATM services by affecting users' decisions regarding their services, for example scheduling or fleet allocation. It would involve a modulation of charges or differential charges. For example, higher charges would be applied at peak periods when a large number of users are competing for limited capacity, and lower charges would be applied outside peak periods. The positive and negative effects associated with this type of incentive are similar to those discussed in WP/10 in the context of airports.

2.8 The third type would affect users' decisions on investments in new technology for onboard equipment. Experience has shown that users tend to defer as much investments in aircraft equipment as possible, preferring short-term savings (deferring an investment) to less certain collective benefits that are dependent on the synchronization of ground and onboard equipment investments. Therefore, incentives for early adoption of onboard equipment may help support the implementation of new technologies and could contribute to a better adjustment over time of ATM capacity to the needs of the air transport industry.

2.9 The application of these three types of incentives would depend on the specific circumstances. In general, an area-specific or local-level application would be suitable for the first and second types of incentives. The third type (and the second type in some cases) would ideally be developed for sub-regional or regional application through cooperation between States and ANSPs, considering that many aircraft operate well beyond the area managed by any single ANSP.

2.10 Regardless of the types of incentives, as a premise, regulators should ensure, within their economic oversight function and through the consultation process, that user incentives are consistent with the principles set out in Doc 9082. As discussed in WP/10 in the context of airports, such principles refer to non-discrimination, no cross-subsidization, transparency and time-limitation. In order to highlight these principles in the application of incentives in the context of air navigation services, paragraph 41 of Doc 9082 should be amended in a similar way as proposed for paragraph 23 in WP/10. It should be noted that the time-limitation aspect is not as relevant for air navigation services as it is for airports.

2.11 Although neither Doc 9082 nor the *Manual on Air Navigation Services Economics* (Doc 9161) provides any additional guidelines beyond these general principles, some areas are identified with a need of further guidance in order to achieve a desired outcome from the application of incentives. Among other things, there would be a need for a regular review to assess whether the incentives meet the stated objectives and whether the estimated savings generated by operational efficiency improvements, as a minimum, offset the cost of the incentives within a reasonable timeframe.

3. CONCLUSIONS

3.1 From the foregoing discussion, it can be concluded that:

- a) States may consider, within their economic oversight functions and through the consultation process, to introduce appropriate forms of incentives for ANSPs and users with a view to optimizing the use and delivery of air navigation services, reducing the overall cost of such services, and increasing their efficiency.
- b) States should ensure that incentives provided by ANSPs for users meet the principles set out in Doc 9082, as well as their stated objectives, and that the estimated benefits offset the cost of incentives within a reasonable timeframe.
- c) ICAO should amend paragraph 41 of Doc 9082 to better reflect the principle of transparency for the implementation of incentive schemes, and develop guidance material on the application of incentives.

4. PROPOSED AMENDMENTS OF POLICIES

4.1 In accordance with conclusion c) of paragraph 3.1, it is proposed to amend sub-paragraph 41 v) of Doc 9082 as follows:

- v) *Where any preferential charges, special rebates, or other kinds of reduction in the charges normally payable in respect of air navigation services are extended to particular categories of users, ~~States governments~~ should ensure transparency in terms of their creation, purpose and the criteria on which they are offered. ~~so far as practicable, that~~ Any ~~any~~ resultant under-recovery of costs properly allocable to the users concerned should ~~is~~ not be shouldered on to other users.*

5. ACTION BY THE CONFERENCE

5.1 The Conference is invited to:

- a) review and adopt the conclusions in paragraph 3.1; and
- b) review and endorse the proposed amendments of Doc 9082 in paragraph 4.1.

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