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FAA-00-7018-37

Ms. Donna McLean
Assistant Administrator for Financial Services
Federal Aviation Administration
800 Independence Avenue, S.W.
Washington, D.C. 20591

Via: Hand Delivery

Dear Ms. McLean:

KPMG is please to deliver one original and 10 copies of its report entitled, "KPMG Preliminary Conclusions Regarding FAA's Methodology for Setting Overflight Fees in Second Fee Schedule." This document is to be submitted in FAA Docket No. FAA-00-701 -- Fees for FAA Services for Certain Flights.

Very truly yours,
KPMG LLP

Stephen R. Blough
*Principal*

KPMG

# KPMG PRELIMINARY CONCLUSIONS REGARDING FAA'S METHODOLOGY FOR SETTING OVERFLIGHT FEES IN SECOND FEE SCHEDULE

**Prepared for:**

**Air Transport Association of Canada**
**(And Various Air Carriers)**
**June 29, 2000**

## EXECUTIVE SUMMARY

At the request of the Air Transport Association of Canada ("ATAC") and various air carriers, KPMG has reviewed and analyzed the fee schedule issued by the U.S. Federal Aviation Administration ("FAA") on May 30, 2000 (but published in the Federal Register on June 6) for the imposition of user fees for air traffic control and related services ("ATC Services") on certain aircraft "that neither take off from, nor land in, the United States," *i.e.*, "overflight fees." We refer to this fee schedule as the "Second Fee Schedule" because FAA's initial fee schedule was issued in March 1997 (and vacated by the Court of Appeals in January 1998).

In addition to the Second Fee Schedule and the "interim final rule" which accompanies the Second Fee Schedule, we have examined 1) the document entitled "Cost Methodology Used to Develop Cost of Enroute and Oceanic ATC Services," prepared by the accounting firm of Arthur Andersen ("Andersen Report"); 2) the "Overflight Fee Development Report" prepared by the FAA ("Fee Development Report"); and 3) the decision of the United States Court of Appeals for the District of Columbia (No. 97-1356) vacating the initial fee schedule. We also consulted aviation industry sources regarding the factual circumstances governing provision of ATC Services by the FAA.

We conducted our critical review of the FAA fee methodology within the framework of the specific statutory directives contained within the U.S. legislation that authorized overflight fees. Our preliminary conclusions are based on our review of these materials and are subject to revision based on receipt of additional information or clarification from the FAA.

Based on our review of these materials and our extensive training and experience in economic analysis, cost accounting and allocation matters, we conclude that the FAA's methodology for setting the new overflight fees is not inherently reliable for ensuring that the new fees are directly related to the costs incurred by FAA to provide ATC Services to each flight.

A fundamental problem with FAA's methodology is that it reflects a program that was not specifically designed to "capture" and report on the direct costs incurred by FAA to provide ATC Services to overflights. As reflected in the Andersen Report, the "primary purpose" of the Andersen Report was to "describe (1) how the Federal Aviation Administration's (FAA) Cost Accounting System (CAS) captures costs for all FAA lines of business, and (2) how costs were assigned to the Enroute and Oceanic air traffic control (ATC) services. . . . Arthur Andersen did not participate in any FAA process to determine any user fees based on this costing methodology." Andersen Report, at iii. Clearly, neither Arthur Andersen – nor any other entity – has undertaken a study specifically designed to determine FAA's direct costs to provide ATC Services to overflights.

Because neither Arthur Andersen nor any other entity undertook the task of determining FAA's direct costs to provide ATC Services to overflights, the FAA has resorted to making critical assumptions that lack an apparent foundation in either fact or economic principles. The FAA has predicated its entire costing methodology on the unsubstantiated assumption that it incurs the "identical" level of costs to provide ATC Services to overflights that it incurs for aircraft that take off from or land in the United States. Fee Development Report at 3, 7-9. This assumption pervades the Fee

Development Report and provides a linchpin for the FAA's fee-setting methodology. Yet FAA has placed no document in the Docket to support such an assumption.

Moreover, FAA's assumption defies reality and common sense. We understand that overflights commonly enter and transit the U.S. Air Traffic Control system at a high cruising altitude (in excess of 25,000 feet). By contrast, flights that originate in the United States enter enroute airspace at a relatively low altitude level as they are "handed off" from the terminal environment, and climb to cruising altitude while they are within enroute sectors. Similarly, flights that terminate in the United States must descend in altitude before being handed off to the terminal environment. For each enroute flight that takes off in or lands in the United States (and the vast majority of enroute flights do both), the FAA must expend considerable labor and other resources to assist in the transition of that flight between the varying altitude levels. By contrast, no similar service is provided to overflights, which generally maintain a high cruising altitude throughout their time in U.S.-controlled airspace. FAA's methodology completely disregards this critical distinction between the level of ATC Services provided to overflights and non-overflights.

Similar erroneous assumptions pervade the FAA's methodology. To set fees for overflights in the "enroute" and "oceanic" environments, FAA has made various assumptions and allocations in each of the following five areas: 1) FAA's total cost pool, 2) the portion of FAA's total cost pool which is dedicated to providing ATC Services to aircraft in the combined enroute and oceanic environments, 3) FAA's respective costs in the enroute and oceanic environments, 4) "overhead" costs which must be excluded from overflight fees, and 5) FAA costs to providing services to overflights in the enroute and oceanic environment (collectively, the "Five Areas"). In each of the Five Areas, FAA has made assumptions and/or allocations that are at best both highly questionable and entirely unsupported, and in other cases entirely unwarranted. In combination, the result is a calculation of overflight fees that is not inherently reliable. In addition, in each of the Five Areas, FAA has failed to disclose critical information behind its assumptions and allocations. The lack of such information renders it impossible for the affected air carriers to determine and verify the manner in which FAA has reached its conclusions regarding its "costs" to provide ATC Services to overflights.

## STATEMENT OF PRELIMINARY CONCLUSIONS

The FAA's methodology behind the Second Fee Schedule reflects critical decisions and assumptions made by the FAA in each of the Five Areas:

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| Area I: | FAA's total costs. |
| Area II: | That portion of FAA's total costs which is attributable to providing ATC Services to aircraft in the combined enroute and oceanic environments. |
| Area III: | The allocation of FAA's costs to provide ATC Services for the combined enroute and oceanic environments, between the enroute and oceanic environments. |
| Area IV: | The "backing out" of overhead costs from the costs which FAA attributes to providing ATC Services in the enroute and oceanic environments. |
| Area V: | The allocation of FAA costs to providing ATC Services in the enroute and oceanic environment, between costs directly related to overflights and costs to other flights. |

In each of these Five Areas, FAA has made critical assumptions and allocations that are erroneous or unwarranted, has failed to provide sufficient information for the affected users of the ATC Services to be able to determine and verify the FAA's purported methodology for setting the fees, or both.

### I. Area I -- FAA's Purported Calculation of its Total Costs

#### A. What FAA Purports to Do:

In the Fee Development Report, FAA states that its "Step 1" for setting overflight fees was to "[d]etermine the FAA's full cost to provide both enroute and oceanic ATC services." Fee Development Report at 3. However, before FAA reached this step it needed to have a determination as to FAA's total cost pool. The Andersen Report lists the data sources used by the Cost Accounting System (CAS) (Andersen Report at 16-19) and provides a highly aggregated listing of the FAA General Ledger account series used (Andersen Report at D-1).

**B. FAA's Unwarranted Assumptions/Allocations:**

1. The Fee Development Report includes in the "Full Cost of Enroute and Oceanic Services" approximately $773 million of "AF Expensed F&E Labor/Non-Labor," "ARA Expensed F&E Labor/Non-Labor," and "ATS RE&D Expensed Labor/Non-Labor" in the Capital Investment category. These expensed capital investment costs are more than three times the amount of depreciation reported. Fee Development Report at 6. The expensed capital cost categories are described as expensed costs related to capital system implementations, acquisitions, and research, engineering and development costs. Fee Development Report at 20-21. The FAA methodology assumes that these costs are directly related to flights occurring during the fiscal year in which they were expensed. The association of these costs with capital programs strongly suggests that this assumption is unwarranted. Even where expensing of capital investment costs for financial statement purposes is warranted, as we presume to be the case here, such costs should be spread over the period of the anticipated benefit for purposes of determining annual costs directly related to ATC Services.

**C. Information Which FAA Has Failed to Provide:**

1. The FAA has failed to provide a complete explanation as to how the total pool of FAA costs was derived.

2. The FAA has failed to provide information showing how the total pool of FAA costs was allocated across all FAA services.

3. The FAA has failed to provide any explanation of the justification for including large amounts of expensed, rather then capitalized, system implementation and capital acquisition costs in the cost pool to be allocated.

## II. Area II -- FAA's Purported Allocation of a Portion of its Total Costs to Costs to Provide Services to Aircraft in the Enroute and Oceanic Environments.

### A. What FAA Purports to Do:

The FAA represents it has implemented a Cost Accounting System ("CAS") which assigns costs to four cost environments relating to air traffic services: Enroute, Oceanic, Terminal, and Flight Services. Cost assignments were made using different methods for different cost elements. In many cases, e.g. AT Field Labor, costs were assigned to specific FAA facilities. Each facility was then assigned to a service delivery point ("SDP"). The FAA determined the combined costs of Enroute and Oceanic services as the costs associated with SDPs providing enroute and oceanic services. Costs that could not be directly assigned to an SDP, or to some service-specific project, were allocated using a variety of methods.

In the Fee Development Report, FAA states that "each cost category in the FAA cost accounting system was individually analyzed to determine whether it was directly related to the provision of enroute and/or oceanic services." Fee Development Report at 3. Costs not directly related to the provision of enroute and oceanic services were not included.

**B. FAA's Unwarranted Assumptions/Allocations:**

1. The FAA assumes that SDP labor costs are an adequate basis for allocating non-labor costs and workers compensation claims costs, stating that personnel compensation is an accurate measure of the distribution of these costs. In reality, non-labor costs and workers' compensation costs often vary substantially as a percentage of personnel compensation. The FAA presents no evidence that this assumption is supported by historical data or other evidence.

2. The FAA assumes that "staffing standards" accurately reflect the allocation of actual labor costs of field labor in the System Support Center and System Management Office. In reality, actual labor hours often vary substantially from staffing standards. The FAA presents no support for the reliability of this assumption.

**C. Information that FAA Has Failed to Provide:**

1. In general, the FAA has provided no discussion of the activities associated with each cost center that would permit evaluation of the reliability of the cost assignments to the four ATC service environments. Further, the FAA has failed to provide information on the total pool of costs associated with each cost element, and the allocation of those cost elements across the four services.

2. The FAA has failed to provide any information supporting the assumption that the costs associated with each facility are uniquely related to a specific SDP.

3. The FAA has failed to provide any information supporting the assumption that all labor costs in an SDP that provides enroute and/or oceanic services are actually directly related to the provision of enroute and/or oceanic services.

4. The FAA has failed to provide adequate information on the allocation of telecommunications costs. The FAA states that telecommunications costs are "assigned to specific facilities based on cost of leased telecommunications lines which connect facilities and SDPs." Fee Development Report at 16. The FAA does not specify how costs are allocated for lines connecting enroute/oceanic SDPs to terminal or flight services SDPs or to shared national facilities. The FAA does not specify the treatment of any telecommunications costs (other than ARINC) not associated with such leased lines.

5. The FAA has failed to provide historical data regarding workers' compensation claims to determine the nature of their distribution between the services.

## III. <u>Area III -- FAA's Purported Allocation of Costs between the Enroute and Oceanic Environments.</u>

### A. What FAA Purports to Do:

1. The Andersen Report first allocates costs to the combined Enroute and Oceanic environments. A separate step takes these combined costs and allocates them between the Enroute environment and the Oceanic environment.

2. Only a small number of cost categories are directly traceable to either Enroute or Oceanic. For the other cost categories, the Andersen Report describes allocations based on other bases.

3. Allocations of Air Traffic Operations ("AT") costs were largely made based on statistical analysis of on-position time in controller logs. This analysis resulted in percentage allocations to Oceanic for each of the four SDPs providing Oceanic

services. Identical percentages were used for each cost element allocated using this method.

4. Allocations of Airway Facilities Operations ("AF") costs, other than Telecommunications, to Oceanic services were largely made based on the ratio of Oceanic "sectors" to total "sectors" at each of the four SDPs providing Oceanic services. Identical percentages were used for each cost element allocated using this method.

5. Allocations of Overhead cost elements were largely made based on total labor costs (where total labor costs in turn were largely allocated based on on-position time).

6. Capital Investment costs were allocated on a different basis for each of the four cost elements included in the capital investment cost category. Expensed systems implementation costs were allocated based on the sector ratio described above. Expensed acquisition costs were allocated based on assignments of costs to projects and projects to services. Research, engineering and development costs were allocated based on analysis of expenditures and the nature of the research. Depreciation costs were assigned to programs and SDPs based on accounting system coding and real property records.

7. Other Costs were assigned based on total costs.

**B. FAA's Unwarranted Assumptions/Allocations:**

1. The FAA assumed that the ratio of Oceanic sectors to total sectors is an appropriate basis to determine Oceanic vs. Enroute costs for AF services and systems implementation costs. There is no basis for such an assumption given the very different

activities performed for flights in Oceanic sectors vs. Enroute sectors. Common sense alone indicates that the sector ratio cannot be an inherently reliable method for performing this allocation. In fact, the only reason provided in the Andersen Report for using this basis was that "other bases produced results that could not be supported by the underlying business operations." Andersen Report at 40.

2. The FAA disregards the costs associated with flights transitioning between Enroute and Oceanic airspace. To the extent that specific services for such transitioning flights are provided by controllers logged into Enroute positions, these costs are included by the FAA in Enroute costs. These costs are then attributed to all Enroute flights even though such services are not used by all Enroute flights.

### C. Information that FAA Has Failed to Provide:

1. The FAA has not provided sufficient information to determine the validity of the statistical study used to establish the ratios of Enroute to Oceanic on-position time.

2. The FAA has not provided sufficient information to determine the reasonableness of the use of a single set of on-position time ratios to allocate a broad spectrum of costs between the Enroute and Oceanic environments.

3. The FAA has failed to provide information regarding allocation of internal FAA telecommunications costs to the Oceanic service. FAA has apparently included both ARINC invoiced costs and an allocation of internal FAA telecommunications costs in the computation of Oceanic telecommunications costs. FAA

has failed to describe the reason and the allocation method used for the allocation of internal costs.

4. The FAA has failed to provide sufficient information to judge the reasonableness of the allocations of capital investment costs based on project or program coding, and the assumptions made in making such allocations.

5. The FAA has failed to provide satisfactory documentation of percentages used to allocate certain individual cost elements, such as Contract Maintenance.

## IV. Areas IV -- FAA's Purported Backing Out of Overhead Costs

### A. What FAA Purports to Do:

The FAA purports to remove all overhead costs from both the Enroute and Oceanic cost pools. The FAA states that overhead costs are removed to comply with the Congressional directive to charge fees that are directly related to FAA's costs of providing services to overflights. The FAA states that the overhead costs removed are "overhead allocations and those overhead costs attributed to each cost category." Fee Development Report at 7.

### B. FAA's Unwarranted Assumptions/Allocations:

We understand that an issue may exist as to whether Congress intended the FAA to recover only incremental costs to providing ATC Services to overflights. To the extent that that was Congressional intent, the FAA makes the unwarranted assumption that all enroute or oceanic costs not categorized as "overhead" are costs that should be included in calculating costs directly related to FAA's costs of providing services to overflights.

This assumption leads the FAA to overstate costs directly related to providing ATC Services to overflights.

The costs directly related to providing services to overflights are the costs that the FAA would not have incurred if overflights did not use any FAA services. These costs are the variable costs associated with overflights. Costs that would have been incurred regardless of the occurrence of overflights are fixed costs. Because fixed costs would have been incurred regardless of whether services were provided to overflights, they should not be included in calculating directly-related costs. The FAA appears to accept this principle by purporting to remove overhead costs from total costs in deriving directly-related costs.

The overhead amount removed clearly does not include all FAA fixed costs of providing ATC Services. Total overhead costs shown are only slightly above the amounts in the Overhead Allocations category. Common sense indicates that a substantial portion of capital costs are also fixed costs. However, the overhead cost amounts removed are too small to include any substantial portion of capital costs. By failing to remove all fixed costs, the FAA overstates costs directly related to providing services to overflights.

**C. Information that FAA Has Failed to Provide:**

1. The FAA has failed to provide any derivation of the amount of overhead costs it purports to have removed. Specifically, neither the Fee Development Report nor the Andersen Report indicates where "overhead costs attributed to each cost category" are tracked and recorded in the CAS. Fee Development Report at 7.

2. The FAA has failed to provide any information concerning the principles used to determine what types of costs are included in overhead.

## V. Area V -- Allocation to Overflights

### A. What FAA Purports to Do:

In the Fee Development Report, Step 3 and Step 4, the FAA calculates a unit cost, per hundred nautical GCD miles flown, associated with providing services to enroute and oceanic air traffic. The FAA makes this calculation based on the total costs calculated for each environment divided by the total GCD nautical miles flown in each environment and then adjusting the result to incorporate a $1.738 million annual charge for billing and collections.

### B. FAA's Unwarranted Assumptions/Allocations

1. The FAA fee development is founded on a sweeping, unwarranted assumption, namely that the "level of ATC services are [*sic*] assumed identical for all aircraft operations within a particular environment (i.e., enroute or oceanic)," and furthermore that this level is proportional to GCD mileage flown. Fee Development Report at 7. A methodology based on this assumption cannot be inherently reliable for determining the burden associated with servicing each flight. This overall assumption in fact incorporates a number of more specific assumptions, as described in the remainder of this section.

2. The FAA assumes that the level of services provided to overflights is the same as the level of services provided to flights originating or terminating in the US. But overflights generally enter, transit, and leave U.S. enroute and/or oceanic sectors at

cruising altitude, while U.S. originating or terminating flights are climbing to or decending from cruising altitude while in enroute sectors.

3. The FAA assumes that the level of services provided to each flight is the same regardless of the level of congestion of the airspace transited by the flight. That is, the FAA assumes that the labor costs required for controllers to maintain proper separation in congested airspace are the same as the labor costs required in sparsely used airspace. The FAA fees rely on this assumption even though the Fee Development Report itself states that "the level of air traffic service provided to overflights depends, in part, on the portions of U.S.-controlled airspace transited by such flights." Fee Development Report at 2.

4. The FAA assumes that the level of services provided to each flight is the same on a per-mile basis regardless of the number of sectors transited by the flight. This assumption ignores the costs incurred by the FAA when a flight is handed off from one sector to another. Such costs will differ among flights with the same number of GCD miles but transiting different numbers of sectors.

5. The FAA further assumes that billing and collection charges are appropriately assessed on a per-mile basis. The FAA fee schedule will result in the same billing and collection fees to a carrier who has one long overflight as to a carrier with many shorter overflights resulting in the same total mileage.

## C. Information that FAA Has Failed to Provide:

1. The FAA has failed to provide an activity analysis associated with overflights in both the enroute and oceanic environments along with a cost driver analysis indicating how best to allocate costs to each activity.

2. The FAA has failed to provide information on cost differences between SDPs, or an explanation of the reason why costs were not allocated between overflights and U.S. originating/terminating flights at individual SDPs in order to capture differences in costs in different portions of U.S. airspace.

3. The FAA has failed to provide any explanation of why the extensive flight data available was not used to determine a reliable allocation of costs, despite the statement in the Andersen Report that "automation systems readily track events related to [ATS] services. For example, a 'handle' is a measurable event tracked by automation systems at each service delivery point and can be considered a unit of service" (Andersen Report at iv, v) and the statement in the Fee Development Report that "ETMS provides detailed information on a flight-by-flight basis for every aircraft operation. Using ETMS data, it is possible to track from origin to destination..." Fee Development Report at 8.

4. The FAA has failed to provide any analysis of the costs associated with billing and collection of overflight fees, or any discussion of the rationale for charging such fees on a per-mile basis.