Twenty Third Meeting of the
Informal South Pacific ATS Co-ordinating Group (ISPACG/23)

Santiago, Chile, 26-27 March 2009

Agenda Item 4: Review Open Action Items

OPTIMUM FLIGHT LEVEL PROFILE FLIGHT PLANS

(Presented by IATA – United Airlines)

SUMMARY

With the advancement of new computer flight planning systems, operators are generating flight plans with optimum flight levels to acquire maximum efficiency for each specific flight. Optimum flight level profiles may include "step down" to lower levels in addition to "step climb" to acquire optimum efficiency. This paper is meant to inform Air Traffic Service Providers of this flight planning capability and seek their opinion on the likelihood of achieving these optimum flight level profiles, especially along User Preferred Routes through out the region.

1. INTRODUCTION

1.1 United Airlines, along with other operators have invested considerable amounts of money on new technology flight planning systems to enable the most efficient operation of a flight. This new technology results in a three dimensional look at flight profiles, in addition to more frequent periods of upper air wind data availability.

1.2 Older "legacy" flight planning systems generally could only ingest two periods of wind modeling, and had very limited dynamic capability to generate the most efficient route, especially on long range operations, such as San Francisco to Sydney and return.

2. DISCUSSION

2.1 New flight planning systems have the capability of providing the least cost flight plan through a variety of means.

2.2 User Preferred Routes are selected based on lateral and horizontal winds, ability to plan around restricted areas or significant weather enroute, and provide a basis for an operator to gain efficiency over fixed ATS routes.

2.3 Costs associated with fuel burn, over flight fees, crew time, and actual verses scheduled time are computed by these new systems.

2.4 We now have seen a potential to enhance the optimum flight plan by taking advantage of en-route wind conditions that may require one or more step downs in flight level, in addition to multiple step climbs.

2.5 The ability to actually "achieve" the optimum planned flight level profile is our greatest concern. Will the ATC system be able to support these optimum flight level profiles? If so, to what degree? Fifty percent of the time, eighty percent of the time, one hundred percent of the time?

2.6 An example of an optimum flight level profile with and without step downs is attached, for your review. It should be noted that the example showing the single step down would have resulted in a 700 USD savings over the other profile.

2.7 Risk associated with planning an optimum flight level profile, containing one or more step downs, with minimum extra fuel has to be considered by the operator.

3. ACTION BY THE MEETING

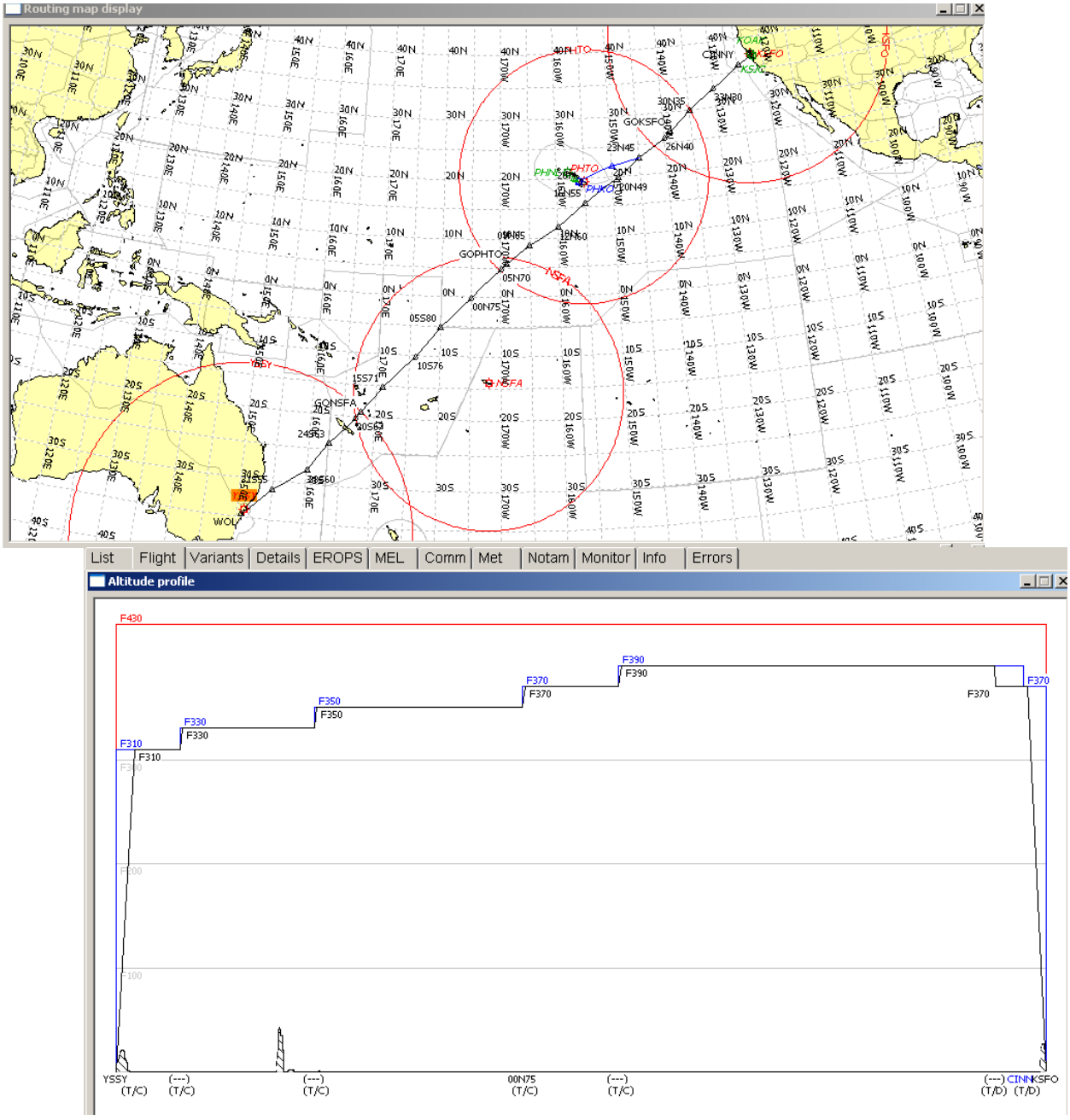
3.1 The meeting is invited to:

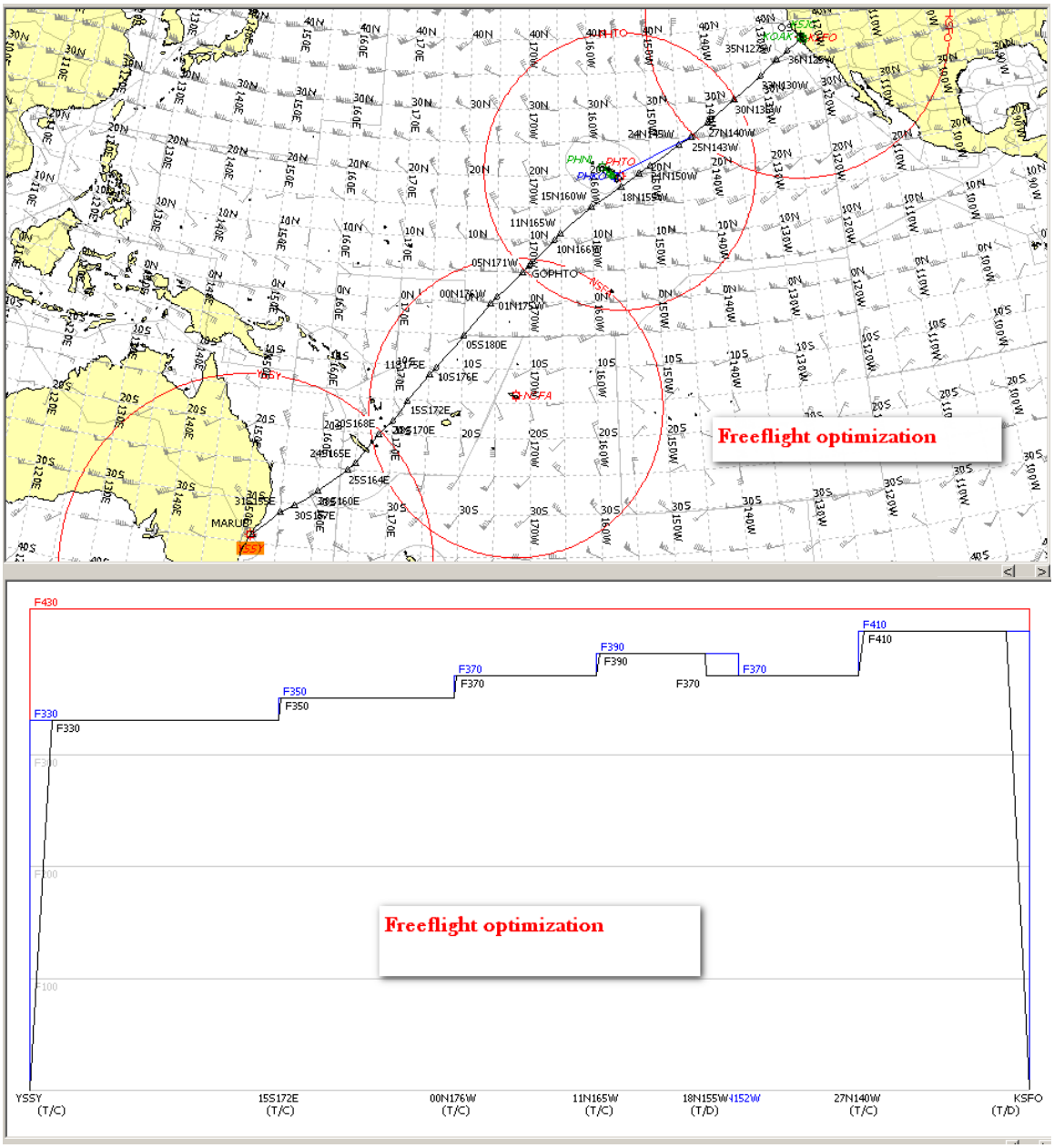
a) Consider the potential degree of success an operator may achieve in the planning of an optimum flight level profile flight plan, which could include one or more step downs.

b) ATSPs are advised to be aware of flight plan system improvements and a desire by operators to maximize efficiency for each operation by optimizing flight level profiles.

Map and Profiles for SYD/SFO (02/18)

Normal optimized “climb” only flight level profile compared to optimum flight level profile with one step down level which has a cost savings of approximately $700 USD.




Freeflight optimization
F430
F410
F390
F370
F350
F330
Freeflight optimization
YSSY (T/C)
15S172E (T/C)
00N176W (T/C)
11N165W (T/C)
18N155W (T/D)
27N140W (T/C)
KSFO (T/D)