



International Civil Aviation Organization

**NINTH MEETING OF THE
COMMUNICATIONS/NAVIGATION/SURVEILLANCE AND
METEOROLOGY SUB-GROUP OF APANPIRG
(CNS/MET SG/9)**

Bangkok, Thailand, 11–15 July 2005

Agenda Item 10: Exchange of OPMET Information

AN ASSESSMENT ON ACCURACY OF EXTENDED TAF

(Presented by Singapore)

SUMMARY

A trial under operational environment was conducted in May 2005 to assess the accuracy of the extended 6 hours of the proposed extended TAF. This paper presents the results of the trial, which was analyzed using a simple evaluation scheme.

1. Introduction

1.1 In the Eighth Meeting of the CNS/MET Subgroup 2004, it was proposed that an extension of validity of TAF to 30 hours be considered, so as to meet the planning requirement of some very long haul flights (18 hours or more). One of the major considerations in providing the long TAF is whether there is a significant decrease in accuracy. To address this concern, a trial was conducted in May 2005.

2. The weather and assessment procedure

2.1 In Singapore, the month of May is normally one of the months in the transition period from Northeast Monsoon to Southwest Monsoon. The weather is characterized with occasional short-duration thunderstorms, lasting usually less than 2 hours. The condition when being forecast is typically expressed using Change Indicator TEMPO covering 4 to 6 hours. Other weather types such as prolonged rain are uncommon during this period.

2.2 In the trial, forecasters were asked to issue a 6-hour forecast beyond the normal 24 hours, in addition to the normal 24-hour TAF. A sample of the forecast set is as follows:

TAF WSSS **122200Z 130024** 20010KT 9999 FEW018CB SCT020 TEMPO 0006
2000 TSRA SCT012CB BKN015

EXTD TAF WSSS **122200Z 140006** 16008KT 9999 FEW018CB SCT020 TEMPO
0206 3000 TSRA SCT012CB BKN015

The assessment during this period amounts to determining the number of “hits”, “misses” and “false-alarms” of forecasting the short-duration thunderstorms/significant showers in the 6-hour blocks as tabulated below:

CASE	FCST(in 6 hr block)	ACTUAL (in 6-hr block)
1. Hit	Wx	Wx
2.	Nil	Nil
3. Miss	Nil	Wx
4. False Alarm	Wx	Nil

Percentage errors for both the extended TAF and the similar 6-hour block contained in the normal TAF were calculated using:

Percentage Error= (Misses + False Alarm cases)/ Total number of TAFs issued in May 2005.

3. Results

	Extended 6 hours	Normal TAF last 6-hour block
Percentage Error	26%	21%

4. Discussion

4.1 This simple common-sense method of verification indicated an increase in percentage error of 5% for the extended 6-hour block as compared with the case when the same 6-hour block was forecast under the normal 24-hour TAF. This method has been found to be useful for Singapore where the most common significant weather type is short-duration (1-3 hours) thunderstorms/showers.

4.2 For comparison, an analysis using the more elaborate scheme described in Verification of Weather Forecasts For The Aerodrome Of The Hong Kong International Airport (Technical Note No. 105) has also been carried out. The scheme has the advantage of taking care of the exact meaning of TEMPO (temporary and infrequent fluctuations), but tends to favour the forecasters when the weather is fine. The Percentage Error Scores using this scheme were 6% and 7%, the latter being for the extended 6-hour block.

5. Action by the Meeting

5.1 The meeting is invited to discuss the content as regards the proposed extension of TAF validity.
