

Change to Aerodrome Forecast to Provide a Date/Time Group

By

Steven Albersheim
Federal Aviation Administration
Michael Graf & Cynthia Abelman
National Weather Service

Abstract

On November 5, 2008 a change in the Aerodrome Forecast (TAF) will occur that introduces a date/time element in the body of the TAF including the change groups for all TAFs provided by the NWS. This change in format is necessary to meet the service requirements as defined by the International Civil Aviation Organization (ICAO) to provide a 30-hour TAF to support flight planning requirements for long haul flights. A group of experts evaluated various options and concluded that, for safety purposes, all TAFs should adhere to a generic format regardless of the validity period of the TAF. The National Weather Service (NWS), at the request of the FAA, will provide a 30-hour TAF for 32 airports.

Introduction:

As part of planning for a flight, pilots are required to obtain all essential and important weather data in support of their flight. They need to be aware of the weather at their planned destination and while en route. The Federal Aviation Administration (FAA) supports general aviation weather pilots in various ways to provide them the information they need to plan and conduct a safe flight.

The United States (U.S.) is competing with other States for market share to support our economy. The aviation industry is a key component to the U.S. economy and, to ensure the U.S. has a viable base, U.S. meteorological services should be harmonized for the National Airspace System (NAS) with the international community. The U.S. continues to work to be as compliant as possible with international standards and protocols. The U.S. adopts, as best as possible, international standards to improve the efficiency of operations and seamless transfer of information. Meteorological data is a key component of this service need. When situations dictate that the U.S. can not accommodate international service requirements, the FAA files a difference with the International Civil

Aviation Organization (ICAO) noting the standards and recommended practices are not in agreement with national practices.

International Operations:

Over the years, U.S. air carriers have expanded their operations internationally and, with the ever evolving changes in aircraft technology, air carriers are scheduling more and more long haul flights. In some circumstances, these long haul flights can be up to 18 hours in duration. Thus, the International Air Transport Association (IATA) approached ICAO requesting a review and evaluation of the meteorological service requirements to support these long haul flights. To support this effort, the international community began evaluating the requirement for the aerodrome forecast (TAF)¹ to support flight planning for long haul flights in excess of 14 hours.

While the current information in the TAF meets the operational service needs for the air carriers to conduct and plan a safe flight, the international carriers identified a need to have a longer validity period than the current 24 hours for the TAF. To satisfy the regulatory requirement to have a TAF valid for the entire period of a planned flight, the need to provide a TAF with a valid period of 30 hours was evident. A group of experts met under the auspices of ICAO to make a recommendation on how best to meet this new service requirement with a planned implementation date of 5 November 2008.

Change in Format:

Several options were evaluated and considered, since only a select number of airports worldwide would require a 30-hour TAF. In the U.S, the National Weather Service (NWS), at the request of the FAA, will provide a 30-hour TAF for 32 airports. A listing of those airports is provided in Table 1.

The experts evaluated several options to meet IATA's service requirement even one option that would prescribe that those airports requiring a 30-hour TAF be binned separately. At first hand, that appeared to be a reasonable choice, but the group determined that it could lead to operational errors and that it would require dual processing for decoders to be able to process a 24-hour TAF and a 30-hour TAF. It could even drive a situation where the NWS would be required to issue two TAF for the same airport one for 24 hours and one for 30 hours to avoid confusion. Furthermore, under ICAO protocol, States subject to the Regional Air Navigation Agreement, a State can issue a TAF for less than 18 hours referred to as short TAF. In the U.S., the NWS issues only TAF for a 24-hour validity period. Therefore, a generic format was essential to all TAFs to avoid processing issues and operational errors in reading the TAF anywhere in the world.

The group of experts concluded it would be best if there was a generic change in the TAF code format regardless of the validity period. In other words, the group recommended a date/time element be included in the body of the TAF as well as the change groups that

¹ In the United States, aerodrome forecast is commonly referred to as a Terminal Aerodrome Forecast

include FM, BCMG, PROB, and/or TEMPO. Note that in the U.S., the NWS does not use BCMG but it is available for use by other States.

Under current practices only the time element is provided and the user has to determine, based on the issuance time, when the date changes within a TAF. To avoid confusion, the best format would include the date with the time element to ensure there is no misunderstanding.

In the future, all TAFs will include a date/time element. Under current practices, a user sees the day and validity period as “160624” which is understood as the TAF being issued on the 16th at 0600 UTC with a validity period from 0600 to 2400 UTC. After the TAF format change, this same information would be presented as “1606/1624” which is read as the 16th day at 0600 UTC with a validity period of 0600 to 2400 UTC on the 16th. This is not a problem when the validity period stays within the same day. The new format ensures no confusion or misunderstanding when the validity period crosses over to the next day.

Now let’s look at what happens in the change groups. Again, existing protocol informs the user when the change starts in hours and minutes. No reference to day is provided. So a user could receive a TAF with “TEMPO 1820” which would be understood as temporary conditions beginning at 1800 UTC and ending at 2000 UTC with no reference to the day. Effective 5 November 2008 when the new TAF code format is implemented, the change group would be very clear as to the day when the change is forecasted to occur. The user would see “TEMPO 0818/0820” This would be understood to mean temporary conditions on the 8th day beginning at 1800 UTC lasting until 2000 UTC on the 8th. The new format is really an improvement in the presentation of information to avoid confusion. This same protocol would be applicable to the PROB. The FM group only makes reference to the day along with the time when the change commences. Table 2 provides a comparison of the existing TAF format with the new format.

Summary:

With a little practice, most users will easily learn and understand this change in format. The FAA and the NWS will be providing information in flyers and pilot key cards as learning tools for all classes of pilots. Also, information will be made available on the NWS AWC web page, www.aviationweather.gov. Detailed information will be provided on this web page for the user to further understand the change.

Last but not to be forgotten is that many users depend on smart processors to provide the TAF in plain English. Processors worldwide will be changed to recognize the new format and will be able to provide the TAF in plain language for those users who do not wish to learn the code format. Contractions and code format were developed decades ago to support a communication system that was slow and to ensure a common standard in contractions. Thus, there was a need to be as succinct as possible to ensure the messages were able to be transmitted on all circuits in a timely fashion with a single worldwide standard contraction. Today’s high speed telecommunication circuits allow for an entirely

new avenue of how to provide the same information, but there is still a need for commonality in standard contractions or use of symbols. Those users who want to avoid learning the change in the format will use smart processors to translate a coded message into plain language. A good example of this capability is provided by the NWS Aviation Weather Center on the ADDS site where the user can read the TAF in its pure form or have the processor present the information in plain language.

Remember, that on 5 November 2008 a new TAF code format will be put into place. This new format will provide to the user a date/time element in the body and the change groups of the TAF.

Table 1

Airports for 30 Hour TAF

1.	KATL	The William B. Hartsfield Atlanta International
2.	KBDL	Bradley International
3.	KBOS	General Edward Lawrence Logan International
4.	KBWI	Baltimore-Washington International
5.	KCLE	Cleveland Hopkins International
6.	KCVG	Covington/Cincinnati
7.	KDEN	Denver International
8.	KDFW	Dallas/Fort Worth International
9.	KDTW	Detroit Metropolitan Wayne County
10.	KEWR	Newark Liberty International
11.	KIAD	Washington Dulles International
12.	KIAH	Houston – George Bush Intercontinental
13.	KIND	Indianapolis International
14.	KJFK	John F. Kennedy International
15.	KLAX	Los Angeles International
16.	KMKE	General Mitchell International
17.	KMSP	Minneapolis-St Paul International/Wold-Chamberlain
18.	KOAK	Metropolitan Oakland International
19.	KONT	Ontario International
20.	KORD	Chicago-O’Hare International
21.	KPHL	Philadelphia International
22.	KPIT	Pittsburgh International
23.	KSAN	San Diego Int’l – Lindbergh Field
24.	KSDF	Louisville, Int’l Standiford Field
25.	KSEA	Seattle-Tacoma International
26.	KSFO	San Francisco International
27.	KSLC	Salt Lake City International
28.	KSTL	Lambert-St Lewis International
29.	KSWF	Stewart International
30.	PANC	Ted Stevens Anchorage International
31.	PHNL	Honolulu
32.	PAFA	Fairbanks

Table 2

Aerodrome Forecast (TAF)

Existing Format	New Format (Effective 5 November 2008)
<p>TAF KABC 131128Z <u>131212</u> 14005KT P6SM OVC040 TEMPO <u>1216</u> OVC025 FM<u>1600</u> 13015G23KT P6SM OVC015 FM<u>2100</u> 13015G22KT P6SM OVC008 TEMPO <u>2101</u> 1SM -SN FM<u>0100</u> 09015KT 3SM BR OVC006 TEMPO <u>0105</u> 2SM -SN BLSN FM<u>0500</u> 01015KT 5SM BR OVC006=</p>	<p>TAF KABC 131128Z 1312/1412 14005KT P6SM OVC040 TEMPO 1312/1316 OVC025 FM131600 13015G23KT P6SM OVC015 FM132100 13015G22KT P6SM OVC008 TEMPO 1321/1401 1SM -SN FM140100 09015KT 3SM BR OVC006 TEMPO 1401/1405 2SM -SN BLSN FM140500 01015KT 5SM BR OVC006=</p>