

GEN 3.5 气象服务

GEN 3.5 METEOROLOGICAL SERVICES

1. 负责机构

1.1 中华人民共和国飞行情报区内的民用航空气象服务，由中国民用航空局空中交通管理局气象处负责管理。

中华人民共和国飞行情报区内国际飞行所需气象服务，由有关的气象中心、机场气象台和气象监视台提供。

中华人民共和国北京市朝阳区东三环中路 12 号，邮编 100022，中国民用航空局空中交通管理局气象处。

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1.2 气象服务根据国际民用航空公约附件 3—国际航空气象服务的规定提供。

1.3 与国际民用航空组织文件有关标准、建议措施和程序的差异在 GEN 1.7 中详细叙述。

2. 负责区域

在中华人民共和国飞行情报区内提供气象监视服务的有关气象监视台名称列表如下：

1. Responsible service

1.1 The Meteorology Division of the Air Traffic Management Bureau of the Civil Aviation Administration of China is responsible for the administration of the meteorological services for civil aviation within the FIRs of the People's Republic of China.

The meteorological services for international air navigation within the FIRs of the People's Republic of China are provided by the Meteorological Center, the Meteorological Watch Offices and the Aerodrome Meteorological Offices concerned.

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1.2 Meteorological services are provided in accordance with the provisions contained in ICAO Annex 3—Meteorological Service for International Air Navigation.

1.3 Differences from ICAO Standards, Recommended Practices and Procedures are detailed in subsection GEN 1.7.

2. Areas of responsibility

The associated meteorological watch offices, by which meteorological watch is provided within the FIRs of the People's Republic of China, are listed below:

区 域 Areas of Watch	气象监视台 MET Watch Offices(MWO)
北京飞行情报区 BEIJING FIR	北京 / 首都气象监视台 BEIJING/Capital MWO
广州飞行情报区 GUANGZHOU FIR	广州 / 白云气象监视台 GUANGZHOU/Baiyun MWO
昆明飞行情报区 KUNMING FIR	昆明 / 巫家坝气象监视台 KUNMING/Wujiaba MWO
兰州飞行情报区 LANZHOU FIR	兰州 / 中川气象监视台 LANZHOU/Zhongchuan MWO
上海飞行情报区 SHANGHAI FIR	上海 / 虹桥气象监视台 SHANGHAI/Hongqiao MWO
沈阳飞行情报区 SHENYANG FIR	沈阳 / 桃仙气象监视台 SHENYANG/Taoxian MWO
乌鲁木齐飞行情报区 URUMQI FIR	乌鲁木齐 / 地窝堡气象监视台 URUMQI/Diwopu MWO
武汉飞行情报区 WUHAN FIR	武汉 / 天河气象监视台 WUHAN/Tianhe MWO
三亚飞行情报区 SANYA FIR	三亚 / 凤凰气象监视台 SANYA/Phoenix MWO
香港飞行情报区 HONG KONG FIR *	
台北飞行情报区 TAIBEI FIR **	
* 见中国香港航行资料汇编 See AIP Hong Kong, China.	
** 见中国台湾航行资料汇编 See AIP Taiwan, China.	

3. 气象观测和报告

详见第三部分—机场（AD）。

Ref. Part III— aerodrome (AD) for details.

4. 服务类型

4.1 供飞行前计划和飞行中重新计划使用的气象情报
机场气象台或指定的航空气象服务部门为飞行前准备计划和飞行中重新计划提供下列气象情报，用户可在所在地机场气象台或通过所在地机场的气象服务网获取：

- a. GRIB 编码形式的高空风 / 温度预报资料或高空风 / 温度预告图；
 - b. 重要天气预告图（SWH 和 SWM）；
 - c. METAR/SPECI 编码形式的机场天气报告；
 - d. TAF 编码形式的起飞机场、着陆机场、备降机场的有效时间为 24 小时或 9 小时的机场预报及其订正报；
 - e. ROFOR 编码形式的航路预报 /GAMET 区域预报；
 - f. SIGMET 情报和与整个航路的相关特殊空中报告。
- 注：相关特殊空中报告是指编制 SIGMET 情报中未利用的报告。

4.2 起飞前提供的气象情报和服务

4.2.1 讲解和磋商

根据机组或航空公司运营人员要求，机场气象台在起飞前可以提供起飞机场、降落机场、备降场以及航路的天气和预期发生的天气情况的讲解，并可进行磋商。

4.2.2 资料展示

机场气象台使用有效方式展示最新可用的下列资料：

- a. METAR/SPECI 编码形式的报告；
- b. 机场预报和趋势着陆预报及其订正；
- c. 与当地机场有关的机场警报；
- d. 重要气象情报和低空气象情报及未编入重要气象情报的特殊空中报告；
- e. 各种天气图和预告图；
- f. 气象卫星图像或其拼图，和？或云层分析图；
- g. 当地的气象雷达图像。

3. Meteorological Observations and Reports

4. Type of services

4.1 Information for pre-flight planning and in-flight replanning
Meteorological information for pre-flight planning and in-flight replanning is supplied by aerodrome meteorological office and/or designated aviation meteorological service units. Users can obtain the meteorological information from local aerodrome meteorological office or via local aerodrome meteorological service network. The meteorological information available is as follows:

- a. Forecast upper wind, upper-air temperature in the GRIB code forms or forecast upper wind, upper-air temperature charts;
- b. Significant weather charts(SWH and SWM);
- c. Reports in the METAR and SPECI code forms;
- d. Take-off, landing and alternate Aerodrome forecasts in the TAF code form and amendments thereto. These forecasts are valid for 24 hours or 9 hours;
- e. En-route forecast in the ROFOR code form/GAMET area forecasts;
- f. SIGMET and AIRMET information and appropriate special air-reports relevant to the entire routes concerned.

Note: Appropriate special air-reports refer to those not in use in the preparation of SIGMET messages.

4.2 Services and information provided before departure

4.2.1 Briefing and consultation

Briefing and consultation will be provided to flight crew and/or other flight operations personnel on request by aerodrome meteorological office before departure. Briefing information includes existing and expected meteorological conditions at the aerodrome of departure, aerodrome of intended landing and alternate aerodromes as well as those along the routes to be flown.

4.2.2 Display

Latest meteorological data available are displayed with appropriate way by aerodrome meteorological office as follows:

- a. Reports in the METAR and SPECI code forms;
- b. Aerodrome forecasts, trend landing forecasts and amendments thereto;
- c. Aerodrome warnings relating to the local aerodromes;
- d. SIGMET and AIRMET information and appropriate special air-reports not included in SIGMET;
- e. Current and prognostic charts;
- f. Meteorological satellite images or mosaics and/or nephanalysis;
- g. Ground-based weather radar images.

4.2.3 飞行文件

民航气象中心和机场气象台为用户提供飞行文件，用户可在所在地机场气象台或通过所在地机场的气象服务网获取飞行文件。

飞行文件包括以下内容：

- 高空风 / 高空温度预告图及其订正预告；
- 重要天气预告图及其订正预告；
- 根据用户和所在地机场气象台的协议，提供起飞预报；
- METAR/SPECI 编码形式的机场天气报告；
- TAF 编码形式、有效时间为 24 小时或 9 小时的机场预报及其订正报；
- ROFOR 编码形式的航路预报 / GAMET 区域预报；
- SIGMET 情报和 AIRMET 情报以及与整个航路的相关特殊空中报告。

注：相关特殊空中报告是指编制 SIGMET 情报中未利用的报告

4.3 供飞行中航空器使用的气象情报

机场气象台通过相关的空中交通服务单位和对空气象广播（VOLMET）（详见 GEN3.5.7）向飞行中的航空器提供情报。

4.4 供空中交通服务单位使用的气象情报

机场气象台使用气象服务网和 / 或其他有效手段为所在地空中交通服务部门提供下列情报：

- 有关机场的例行和特殊气象报告，包括当时的气压数据、机场预报和趋势着陆预报及其修订预报；
- 如有仪器遥测的跑道视程（RVR）数值，则提供实时显示；
- 重要气象情报（SIGMET 和 AIRMET）、风切变警报和机场警报；
- 经当地同意的任何外加的气象情报，例如地面风预报以决定是否改变使用跑道；
- 收到的火山灰云信息中，尚未发布的重要气象情报。

4.5 供搜寻和援救服务单位使用的气象情报

机场气象台和 / 或其他航空气象服务单位可为搜寻和援救服务单位提供下列情报：

- 航路上的重要天气现象；
- 云量和云状（尤其是积雨云）；云底和云顶高度；
- 能见度和降低能见度的现象；
- 地面风和高空风；
- 地面状态，尤其是有无积雪或积水

5. 经营人要求的通知

4.2.3 Flight documentation

Flight documentation is supplied by Civil Aviation Meteorological Center and aerodrome meteorological office. Users may obtain the flight documentation from local aerodrome meteorological office or via local meteorological service network. The flight documentation includes the following particulars:

- Forecast upper wind, upper-air temperature charts and amendments thereto;
- Significant weather charts and amendments thereto;
- Forecasts for take off in the light of agreements between local aerodrome meteorological office and user;
- Reports in the METAR and SPECI code forms;
- Aerodrome forecasts in the TAF code form and amendments thereto with a validity of 24 hours or 9 hours;
- En-route forecast in the ROFOR code form/GAMET area forecasts;
- SIGMET and AIRMET information and appropriate special air-reports associated with the entire routes concerned.

Note: Appropriate special air-reports refer to those not in use in the preparation of SIGMET messages.

4.3 Meteorological information for aircraft in flight

Meteorological information for use by aircraft in flight is supplied by meteorological office to its associated air traffic service unit and through VOLMET broadcast. (REF GEN 3.5.7 for details).

4.4 Information for air traffic services units

The following meteorological information is supplied to air traffic service units via meteorological service network and/or other valid methods by its associated aerodrome meteorological office:

- Local routine reports in the METAR/SPECI code forms, including current pressure data, aerodrome and trend-type landing forecasts and amendments thereto;
- Remote display providing runway visual range (RVR) values, where such values are measured by instrumental means(if any);
- SIGMET and AIRMET information, aerodrome warning and windshear warnings;
- Any additional meteorological information as agreed upon locally, such as forecasts of surface wind for the determination of possible runway changes;
- Information received on volcanic ash cloud, about which a SIGMET message has not been issued.

4.5 Information for search and rescue services units

The following meteorological information are supplied to search and rescuer service units by its associated aerodrome meteorological office and/or other aviation meteorological service units:

- Significant en-route weather phenomena;
- Cloud amount and type, particularly CB; height indications of bases and tops;
- Visibility and phenomena reducing visibility;
- Surface wind and upper wind;
- State of ground, in particular, the presence of any snow accumulation or standing water.

5. Notification required from operators

5.1 定期航班

根据双边协议提供服务，除非飞行计划有变化，一般不需要通知。

5.2 非定期航班

经营人或航务代表应将所需气象情报的种类、起飞时间和所飞航路等内容，提前 24 小时通知有关的机场气象台。

5.1 Scheduled services

Subject to the provisions of a bilateral agreement, no notification is required except in the case of a change to a flight plan.

5.2 Non-scheduled services

Notification shall be made by an operator or his representative for flight operations to an associated aerodrome meteorological office 24 hours in advance, in respect of the type of meteorological services needed, the estimated time of departure, the routes to be flown and so on.

6. 航空器报告

6.1 航空器例行报告

在中华人民共和国飞行情报区内飞行的航空器，应当在规定的报告点作例行气象观测和报告。

6.2 航空器特殊观测报告

所有航空器在以下情况下，应当作特殊天气观测并向空中交通管制部门报告：

- a. 遇到严重结冰或颠簸；
- b. 在跨音速或超音速飞行中遇到中度颠簸、雹或积雨云；
- c. 其他气象情况，例如为重要气象电报规定的其他航线天气现象，机长认为这些天气现象可能影响安全或者严重地影响其他航空器的飞行。

6. Aircraft reports

6.1 Routine aircraft reports

All aircraft flying within the FIRs of the People's Republic of China shall make routine meteorological observations and reports at the designated reporting points.

6.2 Special aircraft observations and reports

All aircraft shall make special weather observations and reports to ATC whenever the following phenomena are encountered:

- a. Severe icing or turbulence;
- b. Moderate turbulence, hail or CB during transonic or supersonic flight;
- c. Other meteorological conditions, for example, other en-route phenomena specified for SIGMET messages, which, in the opinion of the pilot-in-command, may affect the safety or significantly affect the efficiency of other aircraft operations.

7. 对空气象广播服务

7. VOLMET service

观测站名称 Name of station	呼号 识别代码 发射 种类) Call sign Identification (EM)	频率 Frequency (KHZ)	广播时间 Broadcast period	服务时间 Hours of service	所含机场 Aero- dromes included	报告、预报所 包含的内容和 格式, 附注 Con- tents & format of REP and FCST & Remarks
1	2	3	4	5	6	7
Beijing	Beijing	Day: 13 825 8 849 Night: 5 673 3 458	0000-1600	H+15 to H+20 and H+45 to H+50	Beijing Dalian Harbin Hohhot Shenyang Tai- yuan Tianjin	METAR, FCST M E T A R M E T A R M E T A R M E T A R M E T A R
				H+20 to H+25 and H+50 to H+55	H a n g z h o u Shanghai	M E T A R METAR, FCST
				H+25 to H+30 and H+55 to H+60	Lanzhou Xi' an Urumqi	M E T A R METAR, FCST METAR

Guangzhou	Guangzhou	Day: 13 825 8 849 Night: 5 673 3 458	Day: 0000-0800 Night: 0800- 2400	H+00 to H+05 And H+30 to H+35	Sanya Xiamen	METAR , FCST METAR
				H+05 to H+10 And H+35 to H+40	G u a n g z h o u Nanning	METAR , FCST METAR
				H+10 to H+15 And H+40 to H+45	C h a n g s h a Chengdu Kun- ming Wuhan	M E T A R METAR , FCST M E T A R METAR

8. 重要气象情报服务

8. SIGMET service

气象监视台 名称 / 地名代 码 Name of MWO/ Location indi- cators	时间 Hours	所服务的 FIR FIR served	重要气象情报 的类型及有效 期 Type of SIG- MET/validity	特殊程序 Specific proce- dures	所服务的 ATS 部门 ATS unit served	附加资料 Additional information	
1	2	3	4	5	6	7	
Beijing ZBAA	H24	Beijing FIR	SIGMET/4-6	As same as ZPPP	Beijing ACC		
Guangzhou ZGGG	H24	G u a n g z h o u FIR	SIGMET/4-6	热带气旋的重要 气象情报的 有效时间为 4- 6 小时 Tropical cy- clone SIGMET valid for 4-6 hours	Guangzhou ACC		
Kunming ZPPP	H24	Kunming FIR	SIGMET/4-6	热带气旋的重要 气象情报的 有效时间为 6 小时，展望为 12 小时 Tropical cy- clone SIGMET valid for 6 hours and out- look for 12 hours, the same as the volcanic ash SIGMET	Kunming ACC		
Lanzhou ZLLL	H24	Lanzhou FIR	SIGMET/4-6		Lanzhou ACC		
Sanya ZJSY	H24	Sanya FIR	SIGMET/4-6		Sanya ACC		
Shanghai ZSSS	H24	Shanghai FIR	SIGMET/4-6		Shanghai ACC		
Shenyang ZYT X	H24	Shenyang FIR	SIGMET/4-6		S h e n y a n g ACC		
Urumqi ZWWW	H24	Urumqi FIR	SIGMET/4-6		Urumqi ACC		
Wuhan ZHHH	H24	Wuhan FIR	SIGMET/4-6		Wuhan ACC		
Hong Kong VHHH	见中国香港航行资料汇编 See AIP Hong Kong, China.						
Taibei RCTP	见中国台湾航行资料汇编 See AIP Taiwan, China.						

8.1 重要气象情报由气象监视台发布, 对下列有关航路上可能影响航空器飞行安全的天气现象, 以及这些现象在时间和空间上的发展, 以缩写明语作有关其发生和 / 或预期发生的简要说明。

8.1 SIGMET information is issued by a meteorological watch office, which gives a concise description in abbreviated plain language concerning the occurrence of specified en-route weather phenomena, which may affect the safety of aircraft operations, and of the development of those phenomena in time and space. The information is indicated using one of the following as appropriate.

a. 在亚音速巡航高度上 At subsonic cruising level:

雷暴 Thunderstorm	OBSC TS	— 模糊不清的	— Obscured
	EMBD TS	— 隐嵌 (在...里) 的	— Embedded
	FRQ TS	— 经常的	— Frequent
	SQL TS	— 飏线的	— Squall line
	OBSC TS HVYGR	— 模糊不清的、伴有大雹	— Obscured with heavy hail
	EMBD TS HVYGR	— 隐嵌的、伴有大雹	— Embedded with heavy hail
	FRQ TS HVYGR	— 经常的、伴有大雹	— Frequent, with heavy hail
	SQL TS HVYGR	— 飏线的、伴有大雹	— Squall line with heavy hail
热带气旋 Tropical cyclone	TC(+ 气旋名称) TC (+ cyclone name)	— 热带气旋 (十分钟平均地面风速 ≥ 63 公里/小时)	— Tropical cyclone with 10 minute mean surface wind speed of 63 km/h(34kt) or more
颠簸 Turbulence	SEV TURB	— 严重颠簸	— Severe turbulence
结冰 Icing	SEV ICE	— 严重结冰	— Severe icing
	SEV ICE(FZRA)	— 由于冻雨引起的严重结冰	— Severe icing due to freezing rain
地形波 Mountain wave	SEV MTW	— 严重的地形波	— Severe mountain wave
尘暴 Duststorm	HVY DS	— 强尘暴	— Heavy duststorm
沙暴 Sandstorm	HVY SS	— 强沙暴	— Heavy sandstorm
火山灰 Volcanic ash	VA(+ 火山名称, 如有) VA(volcanic name, if known)	— 火山灰	— Volcanic ash

b. 在跨音速高度层和超音速巡航高度层上 At supersonic cruising level

颠簸 Turbulence	MOD TURB	— 中度颠簸	— Moderate turbulence
	SEV TURB	— 严重颠簸	— Severe turbulence
积雨云 CB	ISOL CB	— 孤立的积雨云	— Isolated CB
	OCNL CB	— 偶然的积雨云	— Occasional CB
	FRQ CB	— 经常的积雨云	— Frequent CB
雹 Hail	GR	— 雹	— Hail
火山灰 Volcanic ash	VA(+ 火山名称) VA(volcanic name, if known)	— 火山灰	— Volcanic ash

8.2 机场警报

机场警报以明语提供有关对地面上的航空器，包括停场航空器和机场设施与服务有害气象情况的简要情报。这种警报是按照当地协议，由指定的气象台向航务部门、机场服务部门和其他有关部门发布。

机场警报是关于发生或预期发生下述一种或几种天气现象：

- 热带气旋
- 雷暴
- 雹
- 雪
- 冻降水
- 白霜或雾凇
- 沙暴
- 尘暴
- 扬沙或扬尘
- 强地面风和阵风
- 飏
- 霜

9. 其它自动气象服务

无

8.2 Aerodrome warnings

Aerodrome warnings give concise information in plain language, of meteorological conditions which may adversely affect aircraft on the ground, including parked aircraft and the aerodrome facilities and services. The warnings are issued in accordance with local arrangements to operators, aerodrome services and to others concerned, by the Meteorological Office designated to provide such service.

The aerodrome warnings are the phenomena related to the occurrence or expected occurrence of one or more of the following :

- Tropical cyclone
- Thunderstorm
- Hail
- Snow
- Freezing precipitation
- Hoar frost or rime
- Sandstorm
- Duststorm
- Rising sand or dust
- Strong surface wind and gusts
- Squall
- Frost

9. Other automated meteorological services

Nil