PROJECT DOCUMENTATION

Master location identifier database

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NOTE

Effective with the October 1, 2010 release (Edition 1.1) and November 1, 2010 release (Edition 2.0) the column format of this database has changed from previous versions. If you use any applications, scripts, or macros that rely upon this database and which were designed around earlier releases, please inspect them and make appropriate changes before use. Though changes cannot be ruled out at any point, no further modifications to the database structure are expected.

If you can loan us a current copy of ICAO Pub 7910, Location Indicators, please contact us at servicedesk@weathergraphics.com. These documents are too cost-prohibitive to purchase on a subscription, and your copies will greatly assist this project. The latest copy we have on file is 7910/133 (September 2009).

Master Location Identifier Database

Documentation

The Master Location Identifier Database (MLID) is an aggregated table of all known worldwide government weather station identifiers. All station equivalencies have been determined and the table allows full crossreferencing, in other words, it is possible to convert a historical station identifier of one type to a current station identifier of another type, and vice versa.

Part of the reason for the development of this listing is that errors, inconsistencies, and omissions exist throughout many official databases. Furthermore, all crossreferenced listings we know of are anywhere from 2 to 15 years out of date, contain omissions, and/or provide little emphasis on international sites.

Because of this, we found it essential to develop harmonized and standardized station tables for our own internal projects. The MLID database has been about 3 years in the making and represents a massive amount of research. It consolidates numerous sources of meteorological station listings and identifier sources, corrects various items of data identified as erroneous, and includes numerous quality control checks.

1. Sources

The list of sources used to compile this database is exhaustive. A complete list of sources is found at the end of this document, but the more important sources include:

* National Flight Database, maintained by the Federal Aviation Administration.
* World Meteorological Organization, Publication 9.
* International Civil Aviation Organization Doc. 7910.
* Department of Defense aeronautical publications
* Master history records from Environment Canada. We contracted with them in April 2010 to obtain this data.
* ICAO, NCDC, and MASLIB station catalogues.

2. Description

The following are columns provided in the Master Location Identifier Database.

2.1. **Country code trigraph.**

COLUMN 1 (A) - country3

This is the ISO 3166-1 alpha-3 abbreviation. Additionally for oceanic locations (ships and buoys) a number of nonstandard ISO 3166-1 codes are used, as fol-

lows: XAT Atlantic Ocean, XPA Pacific Ocean, XIN Indian Ocean, XAR Arctic Ocean, and XGM Gulf of Mexico. The ISO-3166 scheme is that which is current as of publication time. This means that deprecated country codes (e.g. DDR for East German sites) are never used.

2.2. **Country code digraph**.

COLUMN 2 (B) - country2

This is the ISO 3166-1 alpha-2 abbreviation. Additionally for oceanic locations (ships and buoys) nonstandard ISO 3166-1 codes are used as follows: XA Atlantic Ocean, XP Pacific Ocean, XI Indian Ocean, XR, Arctic Ocean, XG Gulf of Mexico. The ISO-3166 scheme is that which is current as of publication time. This means that deprecated country codes (e.g. HV for Upper Volta) are never used.

2.3. **Country name**.

COLUMN 3 (C) - country_name

Plain-language country name. This is valid as of 2010; old country codes (e.g. South Vietnam) are never used

2.4. **Region**.

COLUMN 4 (D) - region

This column holds the ISO 3166-2 country subdivision code.

2.5. **Subregion**.

COLUMN 5 (E) - subregion

This column is used for other region representations not recognised in ISO 3166 format, such as codes for the Hawaiian Islands. At this time there is no firm scheme or standardization for code representations; this will be forthcoming in future updates.

2.6. **City**.

COLUMN 6 (F) - city

Indicates the name of the closest populated area (not the facility name). A populated area is considered to be the closest civilian community with mixed residential and commercial zones. Alternate names are demarcated by a pipe symbol (either space padded or not). The most widely accepted name comes first. The BGN/PCGN system is preferred for Romanization of Russian and should appear first; GOST translations may be provided afterward.

2.7. **Station name** .

COLUMN 7 (G) - station_name

The current name of the facility hosting the weather observation site. Alternate names which are current will also be listed, using an ampersand as a delimiter. All known historical names will also be listed, using a pipe symbol as a delimiter. Ordering is in reverse chronological order or most significant to least significant. If the entire entry is prefixed with (Abandoned) it means the facility no longer exists and may not appear on current maps or photographs or is in severely neglected condition. To allow proper alphabetization, station names will not start with a descriptor abbreviation (particularly in the case of naval air stations). Designated descriptor abbreviations are as follows: AFB (Air Force Base), AB (Air Base), AFS (Air Force Station), AF Aux (Auxiliary Airfield), AHP (Army Heliport), AAF (Army Air Field), NAS (Naval Air Station), NOLF (Naval Outlying Field), Intl (International), CAA (Civil Aeronautics Authority), AMOS (Automated Meteorological Observatory), LS (light station), LH (light house); RAF (Royal Air Force); CS (Climate Station, Canada).

2.8. **Current station name**.

COLUMN 8 (H) - station_name_current

If data appears in this row (it is printed in red for emphasis) then the value indicated here pre-empts station_name_current as the station name. This is often used in instances where the geographic coordinate had a completely different operator, name, or purpose (particularly when civil airfields were formerly used as military bases). If no value appears here, then the value in the previous column applies. Alternate names are separated by a pipe (|), which may or may not be space padded, preferably in reverse chronological order.

2.9. **Station key**.

COLUMN 9 (I) - station_key

This is a 8-character code that indicates a unique geographical location. It is for Weather Graphics internal use. It is constructed from the ISO 3166-1 alpha-2 country code and an arbitrary current applicable identifier. Identifier information should never be extracted or inferred from this element. Rather this element is only intended for database purposes to match multiple lines to a common arbitrary key. This may be standardized in future releases.

2.10. **Crossreference ICAO identifier**.

COLUMN 10 (J) - icao_crossreference

The crossreference columns are used to provide the *current (non-obsolete) identifier* in use for the geographic coordinates shown on this row. In other words it can be used to convert an obsolete identifier to a current one. If the field is blank, then there is no known current identifier. For more information on this type of identifier see the appropriate identifier listing in the paragraphs ahead.

2.11. **Crossreference national identifier**.
COLUMN 11 (K) - national_id_crossreference

The crossreference columns are used to provide the *current (non-obsolete) identifier* in use for the geographic coordinates shown on this row. In other words it can be used to convert an obsolete identifier to a current one. If the field is blank, then there is no known current identifier. For more information on this type of identifier see the appropriate identifier listing in the paragraphs ahead.

2.12. **Crossreference WMO identifier**.
COLUMN 12 (L) - wmo_crossreference

The crossreference columns are used to provide the *current (non-obsolete) identifier* in use for the geographic coordinates shown on this row. In other words it can be used to convert an obsolete identifier to a current one. If the field is blank, then there is no known current identifier. For more information on this type of identifier see the appropriate identifier listing in the paragraphs ahead.

2.13. **Crossreference WBAN identifier**.
COLUMN 13 (M) - wban_crossreference

The crossreference columns are used to provide the *current (non-obsolete) identifier* in use for the geographic coordinates shown on this row. In other words it can be used to convert an obsolete identifier to a current one. If the field is blank, then there is no known current identifier. For more information on this type of identifier see the appropriate identifier listing in the paragraphs ahead.

2.14. **Crossreference IATA identifier**.
COLUMN 14 (N) - iata_crossreference

The crossreference columns are used to provide the *current (non-obsolete) identifier* in use for the geographic coordinates shown on this row. In other words it can be used to convert an obsolete identifier to a current one. If the field is blank, then there is no known current identifier. No historical IATA data is provided in the listings; this field is for casual use only and little work is done to verify the accuracy.

2.15. **Identifier status**.
COLUMN 15 (O) - identifier_status

This indicates the status of all identifiers in the non-crossreference identifier columns which follow. Status flags include "m" for master rows (current identifiers), "x" (obsolete identifiers), and occasionally "a" (abandoned identifiers, but probably not reassigned). The overall rule is that *all data from the non-crossreference columns are considered obsolete if an "m" is not present in this column*; such data is provided for forensic and climatological purposes. Identifiers in the crossreference columns are always assumed to be current at publication time.

2.16. **ICAO identifier**.
COLUMN 16 (P) - icao

This column contains a historical International Civil Aeronautical Organization (ICAO) location indicator for the geographic coordinate in the lat and lon columns. If the row is current, then the current identifier will appear here. This is always a 4-character alphanumeric code. If a Start Date or End Date is specified in the date columns, then all data in this field applies only during that period. If an "m" is not present in the historical_identifier_status row, then any information in this field is considered obsolete, whether or not start or end dates are specified.

2.17. **ICAO identifier quality**.
COLUMN 17 (Q) - icao_quality

Contains a quality code, as follows:

A	Obtained from a cardinal source
B	Obtained from cardinal source but not published in Pub 7910
C	Obtained from a secondary source
E	Not listed in cardinal sources (inactive) but probably correct
F	May be inaccurate

2.18. **ICAO identifier source**.
COLUMN 18 (R) - icao_source

Contains a source code which indicates the source of the icao data values. See Appendix 1 for a description of source codes.

2.19. **National identifier**.
COLUMN 19 (S) - national_identifier

Contains a national identifier keyed to the country name (i.e. the identifier is not valid outside that country). In the United States, this column contains a historical Federal Aviation Administration (FAA) location identifier for the geographic coordinate in the lat and lon columns. If the row is current, the current identifier will appear here. This is always a 3-character alphanumeric code. Four-character codes are omitted from this database since they are never used to transmit weather data. NEXRAD site identifiers are omitted; these must be treated like NWS Location Identifiers (special identifier column) since the FAA facility and radar site can share an identifier but be many miles apart. If a Start Date or End Date is specified in the date columns, then all data in this field applies only during that period. If an "m" is not present in the historical_identifier_status row, then any information in this cell is considered obsolete, whether or not start or end dates are specified.

Recognized assignments are as follows:

* United States: Federal Aviation Administration (FAA) location identifier

* Canada: Nav Canada location identifier

National identifiers do not have global scope. For example in the U.S. WSD is White Sands Missile Range and in Canada is Summerside, PE. Call signs based on this identifier therefore must be used in conjunction with the country name. NEXRAD site identifiers are omitted; these must be treated as NWS Location Identifiers (special identifier column) since the FAA facility and radar site can share an identifier but be many miles apart.

2.20. **National identifier quality**.
COLUMN 20 (T) - national_identifier_quality

Contains a quality code

A	Obtained from a cardinal source
C	Obtained from a secondary source
F	May be inaccurate

2.21. **National identifier source**.
COLUMN 21 (U) - national_identifier_source

Contains a source code which indicates the source of the national_identifier data value. See Appendix 1 for a description of source codes.

2.22. **WMO identifier**.
COLUMN 22 (V) - wmo

This column contains a historical World Meteorological Organization (WMO) station identifier for the geographic coordinate in the lat and lon columns. If the row is current, then the current identifier will appear here. This is always a 5-digit numeric code. If a Start Date or End Date is specified in the date columns, then all data in this field applies only during that period. If an "m" is not present in the historical_identifier_status row, then any information in this cell is considered obsolete, whether or not start or end dates are specified.

2.23. **WMO identifier quality**.
COLUMN 23 (W) - wmo_quality

Contains a quality code

A	Obtained from a cardinal source
B	Obtained from a primary source at the national level
C	Obtained from a non-primary source at the national level
D	Obtained from a private party source
F	May be inaccurate

2.24. **WMO identifier source**.
COLUMN 24 (X) - wmo_source

Contains a source code which indicates the source of the wmo_historical data value. See Appendix 1 for a description of source codes.

2.25. **MASLIB identifier (maslib)**.
COLUMN 25 (Y) - maslib

This column contains the Air Force MASLIB identifier. This is generally equivalent to the WMO index with an extra digit on the end. The extra digit usually indicates the geographic relationship of the station to the WMO station it is based from, though the details are not important in this document. If a Start Date or End Date is specified in the date columns, then all data in this field applies only during that period.

NOTE: No quality column is provided for the WBAN Identifier since there is only one agency that originates MASLIB identifiers (Det 7 AFGWC, now Det 7 AFWA).

2.26. **MASLIB source**.
COLUMN 26 (Z) - maslib_source

Contains a source code which indicates the source of the wban_historical data value. See Appendix 1 for a description of source codes. If an "m" is not present in the historical_identifier_status row, then any information in this cell is considered obsolete, whether or not start or end dates are specified.

2.27. **WBAN identifier**.
COLUMN 27 (AA) - wban

This column contains a historical WBAN identifier for the geographic coordinate in the lat and lon columns. If the row is current, then the current identifier will appear here. These are primarily for United States locations and are used for climatological purposes. If a Start Date or End Date is specified in the date columns, then all data in this field applies only during that period.

NOTE: No quality column is provided for the WBAN Identifier since there is only one agency that originates WBAN data (NCDC).

2.28. **WBAN source**.
COLUMN 28 (AB) - wban_source

Contains a source code which indicates the source of the wban_historical data value. See Appendix 1 for a description of source codes. If an "m" is not present in the historical_identifier_status row, then any information in this cell is considered obsolete, whether or not start or end dates are specified.

2.29. **Special Identifier**.
COLUMN 29 (AC) - special

A special identifier is indicated in the format *a.../i...* where *a...* is the agency scheme name and *i...* is the station identifier for that scheme. Consult Appendix 2 for detailed information on this column.

2.30 and 2.31. **Latitude (lat_prp) and Longitude (lon_prp)**.
COLUMN 30 (AD) - latitude and COLUMN 31 (AE) - longitude

These fields are used to present the latitude and longitude for the station in decimal degrees. Negative values are used for the southern and western hemispheres.

The ideal coordinate set for the MLID table is determined by the smallest-scale meteorological variable. This variable is wind, but it is not practical to determine coordinates for wind equipment since most aerodromes have multiple wind sensor sets and switch them according to which is closest to the active runway touchdown zone. Therefore the desired coordinate in the MLID is that of the Stevenson screen, where temperature measurements are taken. If this does not exists, the rain gage or barometer position is desirable. Future MLID releases may encode individual equipment coordinates in the remarks section.

However in most cases, the precise position of meteorological equipment is unknown or is not published with any degree of precision. In such cases, the MLID coordinate is that of the airfield reference point (ARP), and if no aerodrome is located at the station, then it is that of the weather station building.

Positions given in the MLID should generally be considered accurate to the nearest thousandth of an arc-degree (±0.001°, or about 364 ft). The MLID does not attempt to account for minor movement of equipment or facilities over time, such as the relocation of a weather station from one building to another on an airfield. This is because such minor equipment moves are often not published and it would enormously expand the complexity of the database. Therefore if we determine a coordinate, we do not generally use precision greater than the nearest thousandth of a degree. Imprecise coordinates (i.e. to the nearest tenth or hundredth of an arc-degree) are sometimes presented to signify serious doubt about the coordinates due to ambiguity in source documents.

It should also be noted that many sources, particularly WMO Pub. 9 and MASLIB, document locations in degrees and whole minutes. This gives an accuracy of only about 1 nautical mile. Furthermore we have frequently found errors of ±5 arcminutes (about 5 nm) in these publications. This is probably ascribed to the use of outdated survey locations by the responsible member weather agency which have never been corrected or updated. We have attempted to improve upon these coordinates were possible, but sometimes it is not possible to know for certain whether a station is at a city observatory or at an airport since such notations are not currently contained within WMO Pub. 9.

2.32. **Latitude-longitude quality**.
COLUMN 32 (AF) - ll_quality

Indicates the quality of the latitude-longitude position shown. A cardinal source constitutes the host country's aeronautical information publication, flight information publications approved for navigational use (Jeppesen, NIMA, or equivalent), the WMO Pub 9 listing, or the NCDC WBAN tables. Secondary sources are all other listings. Where multiple sources exist, those corresponding to lower

alphabetic quality characters take precedence, so in effect, known meteorological equipment coordinates will always supersede airfield reference points.

A	Stevenson screen (temperature) location, surveyed
B	Stevenson screen (temperature) location, estimated, reliable
C	Barometer location
D	Rain gage location
E	Anemometer location (multiple anemometer sets do not exist)
G	Generic weather station coordinate from a cardinal source
I	Weather sensor equipment, estimated and unconfirmed
K	Generic weather station coordinate from a secondary source
M	Airfield reference point from a cardinal source, surveyed
N	Airfield reference point from a cardinal source, estimated
O	Airfield reference point from a reliable source
Q	Other reference point from a reliable source
S	Unspecified position from a cardinal source or a reliable source (and which has been crosschecked)
T	Unspecified position from a reliable source, not crosschecked
Y	Position may be erroneous but is believed to be accurate to within about 10 nm; the best guess is shown; sources are either inconsistent, non-existent, or unreliable
Z	Position may be erroneous by more than 10 nm; the best guess is shown; sources are either inconsistent, non-existent, or unreliable

2.33. **LL source**.
COLUMN 33 (AG) - ll_source

Source of latitude-longitude data. See Appendix 1 for source codes.

2.34. **Elevation of the primary reference point**.
COLUMN 34 (AH) - elev_prp

Elevation in meters of the primary reference point. This is equivent to H_{ha}: the official altitude of the aerodrome, or if not an aerodrome, the average elevation of terrain around the station.

2.35. **Station elevation quality**.
COLUMN 35 (AI) - ll_source

Quality of the station elevation value. Codes are as follows:

A	Cardinal source, surveyed
B	Cardinal source, estimated
C	Cardinal source, unspecified method
D	Reliable secondary source, surveyed
E	Reliable secondary source, estimated
F	Reliable secondary source, unspecified method

G Interpolated from digital elevation model
H Estimated
Z Estimated, may be erroneous

2.36. **Station elevation source**.
COLUMN 36 (AJ) - ll_source

Source of latitude-longitude data. See Appendix 1 for source codes.

2.37. **Barometer elevation**.
COLUMN 37 (AK) - elev_baro

Elevation in meters of the barometer, if different or known. This is the WMO value H_p, station elevation, which is the datum level to which barometric pressure reports at the station refer.

2.38. **Barometer elevation quality**.
COLUMN 38 (AL) - elev_baro_quality

Quality of the barometer elevation value. Codes are as follows:

A Cardinal source, surveyed
B Cardinal source, estimated
C Cardinal source, unspecified method
D Reliable secondary source, surveyed
E Reliable secondary source, estimated
F Reliable secondary source, unspecified method
G Interpolated from digital elevation model
H Estimated
Z Estimated, may be erroneous

2.39. **Barometer elevation source**.
COLUMN 39 (AM) - elev_baro_source

Source of latitude-longitude data. See Appendix 1 for source codes.

2.40. **Time zone**.
COLUMN 40 (AN) - time_zone

Start date in *yyyy*, *yyyymm*, or *yyyymmdd* format, indicating the dates for

2.41. **Postal code**.
COLUMN 41 (AO) - postal_code

Start date in *yyyy*, *yyyymm*, or *yyyymmdd* format, indicating the dates for

2.42. **Start date**.
COLUMN 42 (AP) - start

Start date in *yyyy*, *yyyymm*, or *yyyymmdd* format, indicating the dates for which the historical columns are valid. If blank, the station is either current or the start date is not known. If an exact calendar date is not specified (e.g. July 1986 rather than 01 July 1986), this indicates the date is approximate based on all available information. The change column indicates the followon identifier for a deleted identifier or the previous identifier for an added identifier.

2.43. **Start source**.

COLUMN 43 (AQ) - start_source

An "E" indicates an estimated year, based on available information. In general when the start date is in *yyyy* format and has a year that ends in "0", the start date is accurate to only within 5 to 10 years.

2.44. **End date (end)**.

COLUMN 44 (AR) - end

End date in *yyyy*, *yyyymm*, or *yyyymmdd* format, indicating the dates for which the historical columns are valid. If blank, the station is either current or the end date is not known. If an exact calendar date is not specified (e.g. July 1986 rather than 01 July 1986), this indicates the date is approximate based on all available information. The change column indicates the followon identifier for a deleted identifier or the previous identifier for an added identifier.

2.45. **End source**.

COLUMN 45 (AS) - end_source

In general when the end date is in *yyyy* format and has a year that ends in "9", the end date is accurate to only within 5 to 10 years.

2.46. **Remarks**.

COLUMN 46 (AT) - remarks

Plain language remarks are entered here which pertain to the row. Automatically-generated additions are written as ADD/yyyymmdd indicating the date that the insertion was made.

Appendix 1

Source codes

Source codes are given in the format *sssyy*, where sss is the code indicating the information source (see below) and yy is the 2-digit year of publication (e.g. 2006 is "06"). Multiple sources are separated with a space or dash, ordered with least significant sources at the end. "Type" indicates what we consider source ranking: 1 for a cardinal source (official regulatory or mission-critical source), 2 for a secondary source (official non-regulatory, non-operational source), or 3 for tertiary sources (private-party databases and lists).

Code	Type	Source
AFD	3	AirfieldsDatabase.com website, by David W. Brooks <www.airfieldsdatabase.com>
AFR	1	DoD Flight Information Publication Supplement: Africa
AFL	3	Abandoned and Little Known Airfields <www.members.tripod.com/airfields_freeman/>
AIP	1	Aeronautical Information Publication of the host country (ICAO-mandated document).
AIR	3	Airnav.com <www.airnav.com>
AKA	1	Alaska Flight Information Publication, Department of Commerce
AMS	2	Army Map Service (includes S501 series topographic maps)
AST	2	ASTER Global Digital Elevation DEM (METI and NASA), 30 m resolution
AWS	1	AWS Master Station Library (MASLIB) Station Index
CAA	1	Civil Aeronautics Administration (CAA) historical documents
CRW	3	CrewLogbook.com pilot submissions (these were removed during a site redesign in early 2010)
ENA	1	DoD Flight Information Publication Supplement: Europe, North Atlantic, and Middle East
FAA	1	National Flight Database. Federal Aviation Administration.
GFN	2	Great Falls - Nome, Photographic Supplement to Pilot's Handbook, U.S. Army Air Forces
GOO	3	Google Earth satellite (high quality position, best guess)
ICA	1	Doc. 7910, *Location indicators*. International Civil Aviation Organization.
JOG	2	Joint Operations Graphic, Defense Mapping Agency, Department of Defense.
JCS	1	JCS NOTAM (US DoD) website, an authoritative mirror of current ICAO data
MET	2	Environment Canada METSTAT table
NCO	2	NCEP NCO
PAA	1	DoD Flight Information Publication Supplement: Pacific Australia and Antarctica
SEC	1	Sectional Aeronautical Chart (USAAF or FAA)
SFI	1	Supplementary Flight Information Document, Department of the Air Force
OUR	3	OurAirports.com airport listings
USA	1	DoD Flight Information Publication Supplement: United States
USG	2	USGS Topographic Map showing runway elevation
VIE	1	Air Facilities Data Pamphlet, Vietnam & Cambodia (U.S. DoD)
WMO	1	Pub. 9, *Location indicators*. World Meteorological Organization.
WWW	3	Where We Were In Vietnam, by Michael P. Kelley

Effective 1 October 2010, AIP sources are listed simply as "AIP" rather then the ISO-3166-2 alpha-3 country code, and the country shown on the column row indicates which nation's AIP was used.

Appendix 2

Special use identifiers

Listed here are special use identifiers which may appear in the MLID:

Prefix	Usage
NWS	NWS Location Identifier (sometimes differs from FAA identifiers, esp. with radar sites)
BUOY	Buoy, with buoy number given
NEXRAD	NEXRAD site, with site number given
TTU	Texas Tech University Mesonet identifier

Appendix 3

Identifier schemes

1. **World Meteorological Organization (WMO) identifier**. The WMO identifier scheme was introduced in 1948 by the International Meteorological Organization (later the WMO) to support the "International Meteorological Code", now known as SYNOP or FM 12 code. It relies on a 5-digit numeric value (zero-padded from the left) to identify a weather station. It is widely used in synoptic ("6-hourly") weather reports and upper air reports. The entire identifier is often called the "index number". The first two digits are sometimes referred to as the "block number" and refer to the geographic area (00-29 Europe, 30-59 Asia, 60-68 Africa, 69 special use, 70-79 North America, 80-89 South America, 90-99 Oceania). The last three digits are loosely referred to as the "station number" in the context of "block numbers". The WMO provides free access to all WMO identifier assignments on its website.

2. **ICAO Location Indicator**. The ICAO Location Indicator is a 4-character identifier which identifies stations which are part of the "aeronautical fixed service". ICAO indicators are published quarterly in ICAO Doc 7910. The original assignments were implemented in the early 1950s, though none of our sources show the exact date; not even ICAO has the information in their holdings. The assignments were distributed as biannual aeronautical amendments starting in January 1958 and published in book form starting in March 1967 with Doc 7910/1. All ICAO identifiers are assigned by the respective countries. The ICAO does not make assignments; it only accepts them under the provisions of their location indicator standards.

3. **FAA Location Identifier (FAA LID)**. The FAA Location Identifier scheme is primarily a 3-character identifier developed in the 1940s by the Civil Aeronautics Administration (CAA). FAA LIDs were positively being published by 1948. The CAA became part of the FAA in 1958, and the identifiers continued in use. By the 1970s, numbers were permissible in the FAA LID for minor airports, while private airports were given 4-character FAA identifiers, which are not used internationally or in meteorology and not in this database.

4. **Weather Bureau Army Navy (WBAN) identifier**. In the 1950s and 1960s, computer programmers with the NWS found that it was difficult to work with weather data because some observations were transmitted with FAA LIDs, some were transmitted with WMO station indexes, and other data on paper had no number at all. The WBAN scheme was developed, which was one of the first large-scale efforts to standardize identifiers. A WBAN identifier is a 5-digit identifier, similar in appearance to the WMO identifier but not equivalent. It is still used by NCDC to identify many of its climatological datasets and continues to

be very important for meteorological work. NCDC provides free access to all known WBAN identifier assignments.

5. **Master Station Library (MASLIB) Catalog Number.** The MASLIB scheme was developed in the 1960s by Air Force Global Weather Center (AFGWC), now part of Air Force Weather Agency (AFWA). It was created to overcome shortfalls in the WBAN system, which is geared mostly for climatology, and assist AFGWC/AFWA with routing and processing data in real-time. AFGWC/AFWA has maintained the MASLIB for over 40 years, though public releases ceased after 1999, presumably because of increased concerns with operations security. The MASLIB code consists of 6 numerical digits, and is heavily based on the WMO identifier. In fact, if an identifier has a WMO assignment, its MASLIB number will be the WMO identifier suffixed with zero. Even if a station does not have a WMO identifier, it will have a MASLIB number very similar to that of neighboring stations that do have a WMO identifier.

6. **Environment Canada location identifier**. Canada bases their identifiers heavily on the FAA Location Identifier scheme, adopting most identifiers out of the Y-- block out of a memorandum of agreement with the FAA. Starting in the 1980s, Canada also began using identifiers starting with W (for climate stations), Z (for special use aviation), and X (for miscellaneous stations). Canadian identifiers are assigned by Transport Canada and Environment Canada. The Canadian METSTAT history tables indicate that Canada has begun using identifiers starting with other parts of the alphabet, such as A for agromet and V for sports venues. It appears this may begin causing numerous identifier conflicts in the near future, so there is the possibility we may have to begin separating the two in our MLID database and harmonizing those schemes.

7. **IATA Location Identifier**. The International Air Transport Association (IATA) location identifiers are 3-character codes developed in the 1950s or 1960s and governed by IATA Resolution 763. They are not equivalent to FAA LIDs. They are not used in meteorology.

Appendix 4

Historical ICAO indicator block changes

Presented here is a list of known ICAO indicator block changes that affected multiple stations. This will be incorporated into the database. If an exact calendar date is not specified, then the effective date is estimated based on all available information. Anyone who has corrections or specific information on effective dates should contact us.

New	Old	Change date	Country or region	Reference
BG	**OU**	1956-1967	Greenland	SFI56,AWS67
BI	**TF**	1956-1967	Iceland	SFI56,AWS67
DF	**DH**	1982-1994	Burkina-Faso (Upper Volta)	AFR82,AWS94
ED, ET	**ED**	1995/01	West Germany, identifiers reassigned to civilian facilities [2]	AWS94
ED, ET	**ET**	1995/01	East Germany, identifiers reassigned to military facilities [2]	AWS94
FE	**FF**	1982-1984	Central African Republic	DOD82,ICA85
FM	**CF**	1985-1990	Saint Pierre Island	ICA85,ICA90
GG	**GP**	1982-1984	Guinea-Bissau	DOD82,ICA85
HH	**HA**	1990-1994	Eritrean stns (seceded from Ethiopia 5/24/1993)	ICA90,ICA95
LJ	**(LK)**	1990-1994	Slovakia (seceded from Czechoslovakia 1/1/1993)	ICA90,ICA95
LP	**CS**	1956-1967	Azores	SFI56,AWS67
LQ	**(LY)**	1990-1994	Bosnia-Herzegovina (seceded from Yugoslavia 3/1/1992)	ICA90,ICA95
LU	**(U)**	1990-1994	Moldova (seceded from USSR 8/27/1991)	ICA90,ICA95
MA	**TN**	1985-1989	Netherlands Antilles	ICA85,ICA90
MP	**MB**	1975-1979	Panama (Canal Zone area)	ICA75,ICA80
MX	**ZQ**	1956-1967	Bermuda	SFI56,ICA70
NV	**NH**	1980-1984	Vanuatu	ICA80,ICA85
OY	**OD**	8/1991	South Yemen (absorbed into Yemen 5/22/1990)	AWS94
PF	**(PA)**	1985-1989	Alaska / Fort Yukon area	ICA85,ICA90
PO	**(PA)**	1985-1989	Alaska / Oliktok area	ICA85,ICA90
PP	**(PA)**	1985-1989	Alaska / Point Lay area	ICA85,ICA90
SK	**MC**	1985-1989	Colombia	ICA85,ICA90
SM	**ME**	1985-1989	Suriname	ICA85,ICA90
SO	**MO**	1985-1989	French Guiana	ICA85,ICA90
TF	**MF**	1985-1989	French Antilles	ICA85,ICA90
TI	**MI**	1985-1989	Virgin Islands (U.S.)	ICA85,ICA90
TJ	**MJ**	1985-1989	Puerto Rico	ICA85,ICA90
TX	**MX**	1985-1989	Bermuda	ICA85,ICA90
TX	**MX**	1976-1994	Bermuda	AWS76,AWS94
U	**EU**	1970-1974	USSR	ICA70,ICA75
(VB)	**XZ**	1960s	Burma/Myanmar (US military tactical sites)	PAA69
VG	**VP**	1979-1974	Bangladesh (seceded from Pakistan 3/25/1971-12/16/1971)	ICA70,ICA75
VV	**VW**	1975-1979	North Vietnam (absorbed into Vietnam 4/30/1975-4/2/1976)	ICA75,ICA80
(VV)	**IK**	1970s	Vietnam (US military tactical sites)	AWS73
Y...	**AA**	11/1993	Australia (South Australia)	AWS94
Y...	**AB**	11/1993	Australia (South Queensland)	AWS94
Y...	**AC**	11/1993	Cocos Island	AWS94
Y...	**AD**	11/1993	Australia (Northern Territory)	AWS94
Y...	**AG**	11/1993	Solomon Islands	AWS94
Y...	**AH**	11/1993	Australia (north Western Australia)	AWS94
Y...	**AL**	11/1993	Australia (Tasmania)	AWS94
Y...	**AM**	11/1993	Australia (Victoria - Tasmania)	AWS94
Y...	**AN**	11/1993	Nauru	AWS94
Y...	**AP**	11/1993	Australia (Western Australia)	AWS94
Y...	**AS**	11/1993	Australia (New South Wales and A.C.T.)	AWS94
AS	**AT**	1975-1979	Australia (north Queensland)	AWS94
Y...	**AY**	11/1993	Australia (Papua New Guinea)	AWS94
Z	**RC**	1/31/1976	People's Republic of China[1]	ICA75,ICA80
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SPECIAL NOTE

[1] Before 1976 the People's Republic of China (PRC) and the island of Taiwan (claimed by and represented by the PRC) were both assigned the RC block. The PRC published a number of identifiers for Taiwan but assigned no identifiers for mainland China. Starting in February 1976, the PRC assigned RC as a Taiwan-specific identifier and began use of the blocks ZB, ZG, ZH, ZL, ZP, ZS, ZU, ZW, and ZY for mainland locations, a practice which continues to this day.

[2] Originally the block ED was assigned to West Germany and ET to East Germany. The countries reunified 10/3/1990. After reunification, the block ED was assigned to German civilian facilities and ET to German military facilities.

Appendix 5

Russian - Latin identifier transcoding

ICAO conversions between Roman and Cyrillic are based on the correspondence of the ITA-2 English and MTK-2 Russian teletype registers. The equivalence of these character sets allowed weather products to flow across the ICAO AFTN network with no need for reprocessing. Since ICAO location indicators are assigned by member states and may appear in official documents such as the Russian AIP before publication in English, these conversion rules are important for working with identifier assignments.

MTK-2	ITA-2
А	A
Б	B
В	W
Г	G
Д	D
Е	E
Ж	V
З	Z
И	I
Й	J
К	K
Л	L
М	M
Н	N
О	O
П	P
Р	R
С	S
Т	T
У	U
Ф	F
Х	H
Ц	C
Ч	—
Ш	—
Щ	—
Ъ	—
Ы	Y
Ь	X
Э	—
Ю	—
Я	Q