Aeronautical Information Requirements

An Airline Perspective

AAITF 15 - June 2020

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AGENDA

- How Airlines Utilize Aeronautical Information
- Aeronautical Information - Airline Challenges
- Aeronautical Information - Observations
- Case Studies
- Conclusion

HOW AIRLINE UTILIZE AERONAUTICAL INFORMATION

- Monitor 164+ AIPs. Additionally data received direct from airports
- 2210 NOTAM received daily to Qatar Airways in-house NOTAM Manager application (NOTAM received are based on specific criteria)
- Perform airport studies, Pilot airport briefing pages, Airline Operational manuals
- AIP data used to populate In-house databases used by operational staff
- Operational impact assessment of Aeronautical Information changes
- Data published used by Flight planning system, pilot navigation charts, FMS Navigation Databases, Take-off performance calculation, Pilot Briefing Packages (NOTAMs/ MET, COMPANY Info)
- Decision Making : Airport selection, Airspace utilized and avoided, Airways used/FLs flown, company policies

AERONAUTICAL INFORMATION - AIRLINE CHALLENGES

Data Element	Common missing Info from publications	Importance to Airlines
❑ Airport	❑ ICAO Airport reference code ❑ Low Visibility Procedures (LVP) – Availability and approval process ❑ Service available during scheduled operational hours	❑ Assessment of Airport adequacy ❑ Impacts operating minima (take-off & Landing) ❑ Determine availability of aerodrome
❑ Runways	❑ RWY Shoulders	❑ Impact operational procedures for A380 / B748
❑ Parking stands And Aprons	❑ PCN values ❑ Aircraft Parking Stand limitations (using codes) not just listing examples of the aircraft types ❑ Guidance systems availability (VGDS) and operation	❑ Assessment of Airport adequacy A380, B748, B773
❑ Taxiways	❑ PCN values, Width ❑ Aircraft restrictions-if applicable	❑ Assessment of Airport adequacy for A380, B748, B773
❑ Approach Procedures	❑ Wording such as “Trial / Experimental procedures”, explanation of the actual constraint(s) expected in their use.	❑ Constraints of such procedures are known and risk assessment done

AERONAUTICAL INFORMATION - AIRLINE CHALLENGES

Data Element	Common missing Info from Publications	Importance to Airlines
❑ Temporary Displaced Threshold	❑ Affected Instrument Approach Proc. e.g. ILS ❑ Alternative Landing AIDs e.g. Temporary PAPI, DTHR markings ❑ Additional restrictions-if any	❑ Prepare for alternate approach procedures ❑ Recommended altitude descent calculations.
❑ Unserviceable NAV AIDS	❑ Affected IAPs ❑ Alternate Approach procedures ❑ Alternate missed approach procedures ❑ The NAV AID's ident and frequency	❑ Prepare for alternate approach procedures
❑ OCA(H) Changes	❑ Revised Aerodrome Operating Minima – if published by the state.	❑ Approach minima determination
❑ Work In Progress (WIP)	❑ Lack of published Information on works ❑ Lack of regular updates on the progress of works through NOTAM with relevant caution to crew ❑ Use of official AIS publications (AIP SUP) instead of safety bulletins published on websites.	❑ Avoid crew confusion when new infrastructure is visible

AERONAUTICAL INFORMATION - OBSERVATION

Provision of aeronautical data

- Lack of compliance to industry publication timeframes
- Lack of awareness and understanding on how aeronautical information impacts airline operation
- Regularly see no stakeholder(s) consultation on major changes
- Regular queries seeking clarification of aeronautical publications
- Lack of coordination with adjacent states in publishing common aeronautical data.

Communications

- Unable to obtain correct AIS contact details
- Lack of response to phone call and email queries, significant follow up time by airline staff
- AIS office - Struggle to locate correct expertise to answer questions
- Language and cultural challenges

AERONAUTICAL INFORMATION – OBSERVATION

- AIP to be published in standard ICAO Format.
    - Users are familiar with ICAO AIP format making it easy to locate and identify data.
- Military airfield available for commercial use (with existing domestic airline operations) are frequently excluded
    - There's a challenge to obtain both contact and aerodrome details.
    - Published guidelines in how to obtain aeronautical data for those airfields would be helpful.
- Large numbers of AIRAC AIP SUP and PERM NOTAM published instead of regular AIP AMDTs
- Notification of NON-AIRAC material (AIP AMDT / AIP SUP / AIC) should have equivalent to a trigger NOTAM
- ICAO to review wording used to define trigger NOTAM release timelines, recommendation is that trigger NOTAM is released on AIRAC AMDT publication day or minimum of 28 days in advance of effective date. Recommendations documented in OPADD to be considered.

Aeronautical Information – Observation / Construction Work Notification & updates

Infrastructure Projects (New TWYs , RWYs, Aprons, Stands)

- No AIS publications available, i.e. No NOTAMs or AIP SUP to advise of works related to TWYs, RWYs, apron construction
- As new infrastructure project progress, aeronautical data must be updated to reflect actual ground conditions
- Published information missing critical elements, i.e. Location, Length, Width, Pavement strength, Speed restrictions, Lighting, stand coordinates, VDGS installed, Aircraft/Stand compatibility/restrictions.
- Navigation charting companies unable to display information on the charts due no published data, crew workload and situational awareness is compromised, Crews rely on visual cues during approach and ground maneuvering.
- NOTAM instead of AIP SUP are often used to describe complex works.
- Potential risk of aircraft incident during ground maneuvering if correct data is not available to pilots.
- Airline regularly needs to take responsibility to provide pilot briefing material which AIS is expected to have published.

Case study No.1 – Construction Works notification & progress update

- New parallel RWY under construction EAST of existing RWY. AIC was issued 2 years previously, no construction date/timeframes included.
- No NOTAM published advising of new RWY construction
- As outline of RWY progressed, crew reports received
- Responsible agency contacted requesting NOTAM to be issued. NOTAM finally issued 6 weeks after request
- Our airline prepared in-house pilot briefing material due lack of published information
- It's important that regular updates of WIP via NOTAM, in this case help heightened crew awareness to avoid RWY misidentification.
- Pilot navigation charts did not display new RWY construction due lack of information.

Case study No.2 – Temporary Displaced Threshold

- Variance in NOTAM content
- Single NOTAM containing many elements vs single NOTAM for each individual element
- Critical data being omitted

Expected information to be published

- Displacement location
- DTHR Lat./Lon.
- Declared Distance
- NAVAID Availability
- Terminal Approach Procedures (what's impacted)
- Vertical descent - Altitude Ribbon recalculated
- Visual Landing Aids (Temporary PAPI for temporary DTHR)
- Lighting availability
- Surface markings
- Special Procedure/Restriction applicable, i.e. RWY available day only
- Obstacles location/height in construction area for performance calculations

Case study No.2 – Temporary Displaced Threshold

NOTAM lack details. No other NOTAMs issued

E) RWY 18/36 LEN DECREASED TO 11129FT (3392M).
DTHR ABM TWY D.
RWY DESIGNATION TODA TORA ASDA LDA
18 3392 3392 3392 3188
36 3392 3392 3392 3392.

NOTAM with expanded details

H----/20 NOTAMN
Q) -----/QMTCM/IV/NBO/A/000/999/3336S15047E005
A) ----
B) 2005122230 C) 2005130030
E) DTHR RWY 28 607M (1992) DUE WIP EASTERN HOOKCABLE MARKED WITH WHITE V-BAR MARKERS EACH SIDE OF THE RWY
TWY A AND TWY B NOT AVBL
PAPI RWY 28 NOT AVBL
RWY LGT NOT AVBL
RWY 28 PERM THR MARKINGS NOT OBSCURED
RWY 28 AIMING POINT AND TDZ MARKINGS INCORRECT
RWY 10 DIST MARKER BOARDS INCORRECT
CRITICAL OBST VEHICLE 6.6FT AGL 1750M FROM START OF TORA RWY 10 DECLARED DISTANCE AND GRADIENT CHANGES

RWY	TORA	TODA	ASDA	LDA
10	1587(5206)	1647(5403)(2.0)	1587(5206)	1587(5206)
28	1587(5206)	1647(5403)(4.6)	1647(5403)	1527(5009)

SUPPLEMENTARY TKOF DISTANCES
RWY28- 1293(4242)(3.3)
RWY10- 1450(4757)(1.6) 1576(5170)(1.9)

Case study No.3 - NOTAM

NOTAM challenges.

- NOTAM format not complying with ICAO standards.
- Use of XXXX instead of relevant QCODE as per ICAO DOC 8126 NSC, Incomplete QCODES, Lack of consistency in the use of QCODES for similar information.
- Missing or errors in **Q-Line fields** (Traffic, purpose, scope, upper/lower limits, coordinates, Radius)
- Multiple FIRs in **Item A)** not separated by space and instead separated by a forward slash
- NOTAM with start date-time same as the end date-time (period of validity zero)
- Date formats i.e. Year/Month/Date/Hour/Minute not adhered to in **Item B)** and **C)**
- NOTAM without **Item E)** and instead NOTAM text appears in **Item D)**

Case study No.3 - NOTAM

NOTAM challenges cont'd

- Use of **confusing/conflicting statements** (such as temporary or suspended in **Item E)** for a NOTAM with the word **PERM** in **Item C)** causing lack of clarity on the required action
- NOTAM with **format errors** cannot be processed by NOTAM processing systems , manual intervention required.
- NOTAM containing information of a permanent nature not having the word PERM in **Item C)**
    - Data service providers can only update pilot charts when they are sure that the information received from states is permanent.
- **PERM NOTAM -** Not incorporated in the AIP within 3 months from date of issue.
- **EST NOTAM -** Not replaced or cancelled before the date specified in **Item C)**
- Trigger NOTAM not issued or issued too late (We prefer Trigger NOTAM to be issued at least on the publication date or at least 28 days before the effective date to alert end users of forthcoming AIP SUP / AIP AMDT for proper planning

Case study No.3 - NOTAM

NOTAM challenges cont'd

- NOTAMs issued at very short notice impact operations, in some cases aircraft is already enroute, i.e. AWY closures, Flight levels blocked, aerodrome not available as alternate.

- Permanent changes of significant importance made at short notice, i.e. IAP suspended , withdrawn
    - Advance Notification (Communications through AOC / Airline groups, Aeronautical Publications)
    - AIRAC adherence

- NOTAM advising NAVAID unserviceability must ensure complete information, i.e. **RWY, IDENT, FREQ.**

- Where NAVAID (VOR / DME / NDB) is used in a procedure , clear guidance should be given on actions to follow i.e. missed approach procedure utilizing a VOR that's declared unserviceable.

- Writing styles applied to NOTAMs varies, i.e. Non- standard abbreviations , full words instead of using ICAO standard abbreviations.

Case study No.3 - NOTAM

NOTAM challenges cont'd
Examples of NOTAMs observed with various discrepancies

- Item A) multiple FIRs to be separated by space and not forward slash. OPADD standard which ICAO has not detailed, so harmonization is require.
    - A) ----/----/----/----
- Incomplete QCODE, relevant QCODE should be used as per DOC 8126 NSC instead of XXXX
    - Q)----/QXXX/IV/NBO/AW/000/010/----------
- Item B) Start and end dates-time of an activity cannot be same
    - B) 2001100938 C) 2001100938
- Item E) is missing RWY identification
    - E) ILS/DME U/S

Case study No.3 - NOTAM

NOTAM challenges cont'd

- Item D) NOTAM text is inserted in item D) instead of item E)
  - D) WORK CMPL)

- Below NOTAM issued with different QCODE for same cotent. NOTAM was corrected after AIS contacted.

A---/20 NOTAMR A--- /20
Q)---- /QFMXX/IV/BO/A/000/999/----N-----E005
A) ---
B) 2005180359 C) 2005250400EST
E) DUE TO COVID-19,ISSUING TIME OF METARS REVISED AS FOLLOWS.
0000,0100,0200,0300,0400,0500,0600,0700,0800,0900,1000,1100,1200,1300,1400,1500,1800 AND 2100.REF AIP GEN 3.5 TABLE GEN 3.5.3.

A----/20 NOTAMR A---/20
Q)----/QFMLT/IV/BO/A/000/999/----N-----E005
A) ----
B) 2005180358 C) 2005250400EST
E) DUE TO COVID-19,
METARS WILL BE ISSUED EVERY 03 HOURS AS FOLLOWS.
0000, 0300, 0600, 0900, 1200, 1500 AND 1800.FURTHER AN ADDITIONAL UPDATED METAR WILL BE ISSUED IN BETWEEN THESE TIMES DEPENDING ON ETA/ETD OF AIRCRAFT. IN CASE OF BAD WEATHER SITUATION, SPECI AND NECESSARY

Case study No.3 - NOTAM

NOTAM challenges cont'd

- NOTAM does not indicate where stands are located. Stands not displayed on pilot navigation charts due lack of information.

E) NEW PARKING STAND NR.801-815,L816 PUT IN USE:
1. PARKING STAND NR.801-815,L816. SURFACE: CEMENT CONCRETE, PCN98/R/B/W/T.
2. WINGSPAN LIMITATION.
NR.801-807:LESS THAN 36M.
NR.808-815:LESS THAN 30.5M.
NR.L816:LESS THAN 65M.
3. OPERATION LIMITATION:
NR.801-807,L816: TAXI IN/OUT BY OWN POWER.
NR.808-815: TAXI IN BY OWN POWER AND BE PUSHED BACK.
4. NOTE:
WHEN STAND NR.L816 IN USE, STAND NR.801-815 CAN NOT USE.
WHEN ANY STAND IN USE BTN NR.801-815, STAND NR.L816 CAN NOT USE

- Pilot unable to identify the IAP as AIPs are not carried onboard the aircraft.

E)REF AIP XXXXXX AD2.24-9A(2015-6-15), AD2.24-10A(2016-10-15), AD2.24-10E(2015-6-15), IAF R245DEG 38.0XXX/1800M OR ABOVE CHANGE TO IAF R245DEG D38.0XXX/R274DEG XXX/1800M OR ABOVE, OTHERS REMAIN.

Conclusion

- Quality of information provided by State AIS regularly falls short of user requirements
- AIM community needs to consider end user requirement(s)
- Regulatory and Quality Management oversight
- Airlines, pilots, data-houses and other end users require:
  - Timely
  - Complete
  - Accurate
  - Aeronautical data of the required integrity & resolution
  - Data presented in standardized format

Thank You