

Noise Abatement Information

Best Practices for Chart Supplement

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**Federal Aviation
Administration**

We are
Airports

Agenda

- **Introduction: Why? Who? How?**
- **Initial Analysis**
- **Inferior Practices**
- **Best Practices**
- **Taxonomy**
- **Examples (before and after)**
- **Next Steps**



Why? Who?

- **Problem:**
 - No standard terminology or structure to describe noise abatement information/procedures within the Chart Supplement
 - Often difficult, or high workload, for pilots to locate and understand the intended noise abatement plan--which can result in pilots not flying the intended noise abatement route or procedure
 - Effectively, there is a gap between in this area
- **Who:**
 - Lead by Office of Airports with active participation by AJV Airport Mapping Team
 - Contractor support from Ricondo
 - Stakeholder engagement: Pilots, Operators, and Airports



SAMPLE

①
CITY NAME

②
AIRPORT NAME (ALTERNATE NAME) (LTS)(KLTs) CIV/MIL 3 N UTC-6(-5DT) N34°41.93' W99°20.20'

③
200 B TPA-1000(800) AOE LRA Class IV, ARFF Index A NOTAM FILE ORL Not insp. MON Airport

④
⑤
⑥
⑦
⑧
⑨
JACKSONVILLE
COPTER
H-4G, L-19C
IAP, DIAP, AD

⑩
⑪
⑫
⑬
⑭
⑮
⑯
⑰
⑱
⑲ → RWY 18-36: H12004X200 (ASPH-CONC-GRVD)
S-90, D-160, 2D-300 PCN 80 R/B/W/T HIRL CL
RWY 18: RLLS. MALSF. TDZL. REIL. PAPI(P2R)-GA 3.0° TCH 36'.
RVR-TMR. Thld dspcd 300'. Trees. Rgt tfc. 0.3% up.
RWY 36: ALSF1. 0.4% down.
RWY 09-27: H6000X150 (ASPH) MIRL
RWY 173-353: H3515X150 (ASPH-PFC) AUW PCN 59 F/A/W/T

⑳ → LAND AND HOLD-SHORT OPERATIONS

LDG RWY	HOLD-SHORT POINT	AVBL LDG DIST
RWY 18	09-27	6500
RWY 36	09-27	5400

㉑ → RUNWAY DECLARED DISTANCE INFORMATION

RWY 18: TORA-12004 TODA-12004 ASDA-11704 LDA-11504
RWY 36: TORA-12004 TODA-12004 ASDA-12004 LDA-11704

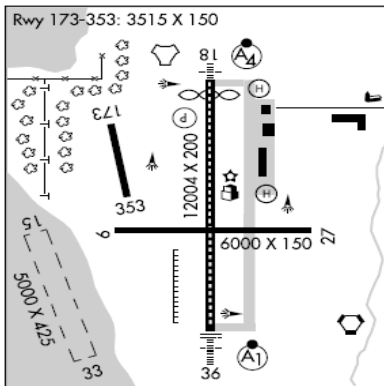
㉒ → ARRESTING GEAR/SYSTEM

RWY 18 HOOK E5 (65' OVRN) BAK-14 BAK-12B (1650')
BAK-14 BAK-12B (1087') HOOK E5 (74' OVRN) RWY 36

㉓ → SERVICE: S4 FUEL 100LL, JET A OX 1, 3 LGT ACTIVATE MALSR Rwy 29, REIL Rwy 11, VASI Rwy 11, HIRL Rwy 11-29, PAPI Rwy 17 and Rwy 35, MIRL Rwy 17-35-CTAF. MILITARY- A-GEAR E-5 connected on dep end, disconnected on apch end.
JASU 3(AM32A-60) 2(AM32A-86) FUEL J8(Mil)(NC-100, A)
FLUID W SP PRESAIR LOX OIL O-128 MAINT S1 Mon-Fri 1000-2200Z‡
TRAN ALERT Avbl 1300-0200Z‡ svc limited weekends.

㉔ → NOISE: NS ABTMT Quiet Hrs 0300-1200Z. No eng or maint runups dur quiet hrs. No TGL or SGL dur quiet hrs.

㉕ → AIRPORT REMARKS: Special Air Traffic Rules-Part 93, see Regulatory Notices. Attended 1200-0300Z‡. Parachute Jumping. Deer invov arpt. Heavy jumbo jet training surface to 9000'. Twy A clsd indef. Flight Notification Service (ADCUS) avbl.



②④ NOISE

Remarks that indicate noise information and/or abatement measures that exist at and in the vicinity of the airport.

Results go here!



How?

- **Intended Outcomes**

- Develop best practices for noise abatement information in the Chart Supplement
 - Develop standard terminology and structure for noise abatement entries published in front matter
 - Chart Supplement entry should normally be the single reference needed by the pilot
 - Define when complex (graphical) noise abatement plans are best to include in the back matter

- **Implementation**

- ‘Best Practices’ guidance document
- ‘New’ noise abatement information will use the guidance document to develop entries for the Chart Supplement
- Airports with existing entries would be requested to revise the entry in accordance with the guidance document (incrementally)



Initial Analysis

- **Evaluated the existing 489 airport noise abatement entries in the Chart Supplement**
 - Used evaluation criteria to consistently evaluate each entry to identify best and inferior practices
- **Areas of interest:**
 - **Consistency** of language, including nomenclature, structure, and taxonomy.
 - **Clarity**, such that a pilot can reasonably follow the intended route or avoid noise sensitive areas?
 - Whether the information published in the Chart Supplement is **complete** or if a pilot needs to reference other sources of information (e.g., websites, phone, etc.)
 - **Location(s)** in the front or back matter that pilots need to reference for noise abatement information



Inferior Practices

- **Incomplete entries (missing relevant information)**
- **Inconsistent use of terminology or use of outdated nomenclature**
- **Incorrect/inconsistent use of abbreviations**
- **Lack of reference to published IFPs or graphics in the back matter**
- **Extraneous information not relevant to flight operations**
- **Inconsistencies between CS entries vs back matter graphics or on airport websites**



Best Practices

- 1. Publish all relevant noise abatement information at an airport within the Chart Supplement**
 - Normally, this should be the single reference needed by a pilot
 - When information is more complex, include graphics in the back matter (with cross reference)
 - Avoid need to call airport or ATCT via phone



Best Practices

2. Consistent terminology and nomenclature:

- When noting hours of operational restriction, use:
 - “Curfew Hrs,” if the restriction/discontinuation of operations during a specific time period is *mandatory*
 - “Quiet Hrs,” if the restriction/discontinuation of operations during a specific time period is *voluntary*
- Common terminology:
 - Procedures are tracks and routes, either as VFR or IFPs
 - Profiles (e.g., NBAA departure or arrival profiles)
 - Noise Sensitive Areas

3. Identify and consistently use abbreviations



Best Practices

4. **Avoid the use of redundant and excessive words**
 - Ex: “Do not overfly *extremely* noise sensitive residential area...”
5. **Specify applicability when applied to a particular aircraft category (Seng piston, JET, MIL, ALL ACFT, etc.)**
6. **Use Zulu as the time standard**
7. **Altitudes in MSL**



Best Practices

- 6. If avoiding overflight of noise sensitive areas (i.e., no procedures), define the location and type of noise sensitive areas in relation to the airport, and how to best avoid**
 - *Ex: Avoid ovft of noise sensitive area lctd 1 NM E of arpt blo 1,000 ft MSL.*
- 7. Most noise abatement plans are voluntary; any mandatory procedures should be identified specifically**



Back Matter Graphic Inclusion

- **Criteria?**
 - Complexity
 - Pilot benefit for visual references to local landmarks
- **Graphics published in the back matter are advised to depict the following:**
 - Noise sensitive area(s)
 - Arrival and departure procedures/routes, as applicable
 - A note indicating the graphic is “not for navigational use”
 - Other pertinent information

Complex example

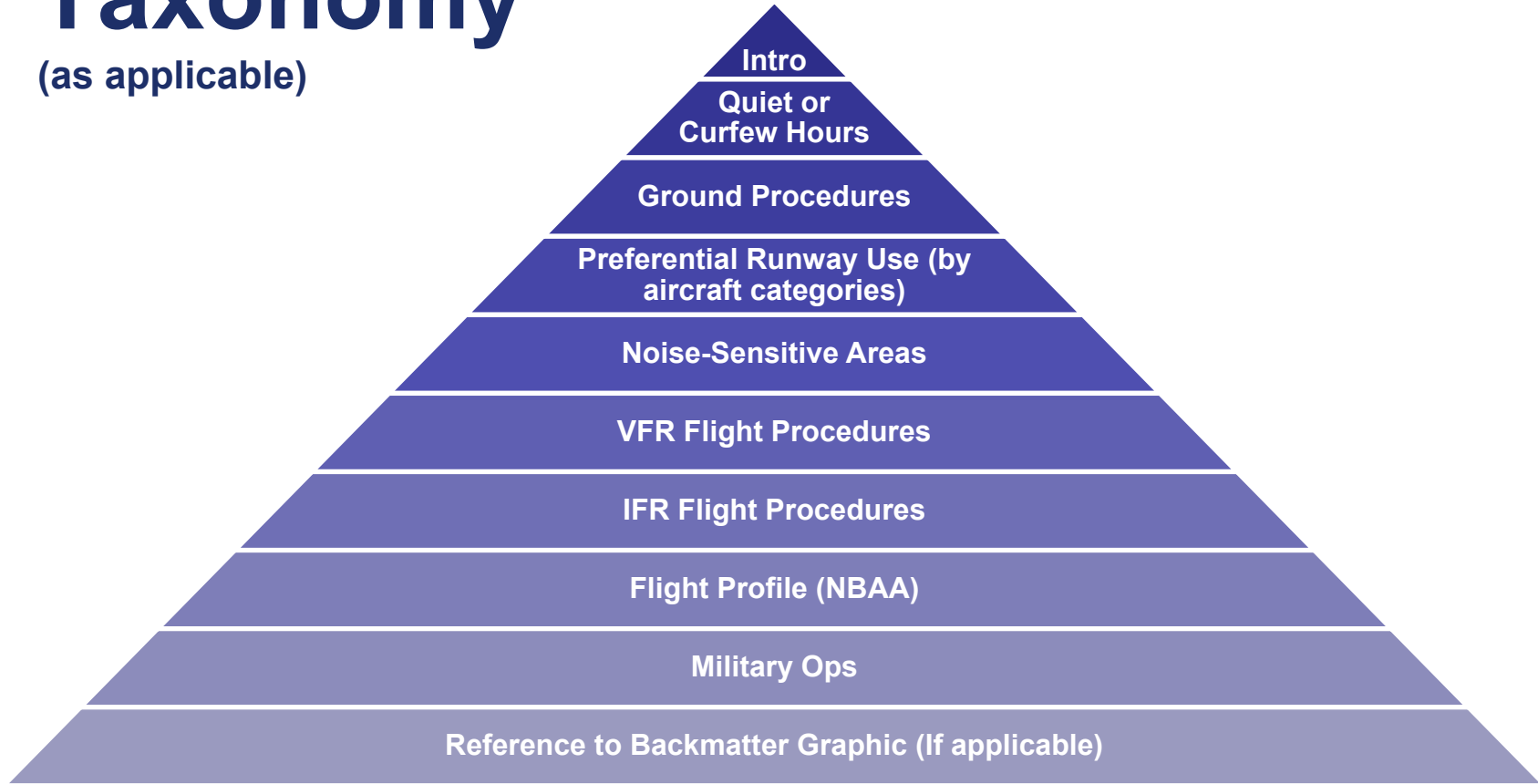
Noise: NS ABTMT in eff all times all acft. Quiet Hrs 0300–1200Z±. Maint runups proh 0100–1300Z±. All acft use recommended dep: Rwy 05 left turn 360° stay W of interstate to 1500'; Rwy 23 rgt turn hdg 255° as soon as practicable after passing rwy end to 1500'; avoid residential areas, overfly mall area.-Rwy 05 left turn out within 1/2 mi and proceed on crs W of I-95. Arr Rwy 23 remain W of I-95 til as close in as practicable to avoid ovft of residential area.

Graphic is better!



Taxonomy

(as applicable)



Noise Abatement Plan



Example 1

- As is:
NS ABTMT pro in eff. Successive and/or simultaneous dep approved on Rwy 36L-18R and Rwy 36C-18C or Rwy 36L-18R and Rwy 36R-18L with crs divergence no later than 2.27 NM from Rwy end.

Missing:

- Correct use of abbreviations
- Reference to procedures in the back matter
- New taxonomy and best practice implementation



Ex 1 Taxonomy Application

Taxonomy Rules	New Text
Intro	Noise: NS ABTMT in eff 24 hrs.
Quiet or Curfew Hours	
Ground Procedures	
Preferential Runway Use	
Noise-Sensitive Areas	
VFR Flight Procedures	
IFR Flight Procedures	IFR Successive and/or simultaneous dep on Rwy 36L-18R and Rwy 36C-18C or Rwy 36L-18R and Rwy 36R-18L with crs divergence no later than 2.27 NM fm EOR.
Flight Profile	
Military Ops	
Reference to Backmatter	See Special Notices –XYZ Airport Noise Abatement



Ex 1 Adjusted

- As is:
NS ABTMT pro in eff. Successive and/or simultaneous dep approved on Rwy 36L-18R and Rwy 36C-18C or Rwy 36L-18R and Rwy 36R-18L with crs divergence no later than 2.27 NM from Rwy end.

- Adjusted:
NS ABTMT in eff 24 hrs. IFR Successive and/or simultaneous dep on Rwy 36L-18R and Rwy 36C-18C or Rwy 36L-18R and Rwy 36R-18L with crs divergence no later than 2.27 NM fm EOR. See Special Notices –XYZ Airport Noise Abatement



Example 2

- As is:
No touch and go ops are permitted btn 0300–1100Z±. NS ABTMT procedures in effect are as follows, Rwy 05, turn left hdg 020° until reaching 1000′, then on crs, Rwy 23, turn left hdg 210° until reaching 1000′, then on crs, Rwy 33, fly rwy hdg until reaching 1000′, then on crs.

Missing:

- Correct use of abbreviations
- New taxonomy and best practice implementation
- Missing relevant parts



Ex 2 Taxonomy Application

Taxonomy Rules	New Text
Intro	Noise: NS ABTMT in eff 24 hrs.
Quiet or Curfew Hours	
Ground Procedures	No maint runups btn 0300-1200Z, exc when rqr for early morning sked fit.
Preferential Runway Use	PREF RWY USE, Rwy 23 for calm winds. No TGL btn 0300–1100Z.
Noise-Sensitive Areas	
VFR Flight Procedures	VFR, Rwy 05 dep, turn left and maint hdg 020° til 3000' MSL, then proceed on crs. Rwy 23 dep, turn left and maint hdg 210° til 3000' MSL, then proceed on crs. Rwy 33 dep, maint rwy hdg til 3000' MSL, then proceed on crs.
IFR Flight Procedures	
Flight Profile	
Military Ops	
Reference to Backmatter	



Ex 2 Adjusted

- As is:
No touch and go ops are permitted btn 0300–1100Z±. NS ABTMT procedures in effect are as follows, Rwy 05, turn left hdg 020° until reaching 1000′, then on crs, Rwy 23, turn left hdg 210° until reaching 1000′, then on crs, Rwy 33, fly rwy hdg until reaching 1000′, then on crs.

- Adjusted:
NS ABTMT in eff 24 hrs. No maint runups btn 0300-1200Z, exc when rqr for early morning sked flt. PREF RWY USE, Rwy 23. No TGL btn 0300–1100Z. VFR, Rwy 05 dep, turn left and maint hdg 020° til 3000′ MSL, then proceed on crs. Rwy 23 dep, turn left and maint hdg 210° til 3000′ MSL, then proceed on crs. Rwy 33 dep, maint rwy hdg til 3000′ MSL, then proceed on crs.



Example 3

- As is:
Voluntary ngt curfew in effect from 0400–1100Z. No high pwr engine/maint runups from 0300–1200Z‡. Noise sensitive area all quadrants, pilots use close–in departure procedures.

Missing:

- New taxonomy and best practice implementation
- Remaining aspects of airport's noise abatement program
- Correct abbreviations
- Reference to published noise abatement IFP



Ex 3 Taxonomy Application

Taxonomy Rules	New Text
Intro	Noise: NS ABTMT
Quiet or Curfew Hours	ALL ACFT, Quiet Hrs 0400-1100Z.
Ground Procedures	No hi pwr eng/maint runups 0300-1200Z.
Preferential Runway Use	PREF RWY USE, dep Rwy 03R when twr is clsd. No int tkfs. No TGL 0300-1200Z dly and also Sun 1600-1700Z.
Noise-Sensitive Areas	
VFR Flight Procedures	
IFR Flight Procedures	IFR, Fly RNAV (GPS) Y RWY 21L.
Flight Profile	JET ACFT, Fly NBAA dep pro.
Military Ops	
Reference to Backmatter	

Ex 3 Adjusted

- As is:
Voluntary ngt curfew in effect from 0400–1100Z. No high pwr engine/maint runups from 0300–1200Z†. Noise sensitive area all quadrants, pilots use close–in departure procedures.

- Adjusted:
NS ABTMT ALL ACFT, Quiet Hrs 0400-1100Z, No hi pwr eng/maint runups 0300-1200Z. PREF RWY USE, dep Rwy 03R when twr is clsd. No int tkfs. No TGL 0300-1200Z dly and also Sun 1600-1700Z. IFR, fly RNAV (GPS) Y RWY 21L. JET ACFT, fly NBAA dep pro.



Next Steps

- **Spring/Summer:**
 - Brief to airport organizations (ACI and AAAE, etc.)
 - Additional engagement with pilots and operators?
- **Fall:**
 - Draft best practices document available for review
 - Brief at Fall ACM



Q/A?



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Backup



Example 4

- As is:
Voluntary NS ABTMT procedures in effect all times all acft. Voluntary curfew 0300–1200Z±. Use NBAA profiles std NS ABTMT apch and departure procedures. All acft use recommended departures: Rwy 05 left turn 360° stay W of interstate to 1500'; Rwy 23 rgt turn hdg 255° as soon as practicable after passing rwy end to 1500'; avoid residential areas, overfly mall area. For NS ABTMT info call 561–391–2202. Rwy 05 left turn out within 1/2 mile and proceed on crs course W of I–95. Arr Rwy 23 remain W of I–95 until as close in as practicable to avoid over flt of residential area. Rwy 23 departures turn to 255° as soon as practicable after passing rwy end. Noise sensitive arpt. Maintenance runups prohibited 0100–1300Z±.

Missing:

- Common taxonomy and best practice implementation
- Correct use of abbreviations
- Other aspects that are part of the airport's noise abatement program
- Also...possibly better for complex graphic in the back matter



Ex 4 Taxonomy Application

Taxonomy Rules	New Text
Intro	Noise: NS ABTMT in eff 24 hrs. ALL ACFT
Quiet or Curfew Hours	Quiet Hrs 0300-1200Z
Ground Procedures	Maint runups proh 0100–1300Z.
Preferential Runway Use	PREF RWY USE, Minimize reverse thrust, use full rwy. Int tkfs, SGL, and Str-in apch discouraged. TGL permitted Mon-Fri 1400-2200Z.
Noise-Sensitive Areas	NSA, Avoid residential areas, ovfl mall.
VFR Flight Procedures	VFR, ALL ACFT, Rwy 05, left tfc pat. Rwy 23, rgt tfc pat. Rwy 05 make crosswind turn ASAP. Rwy 05 dep, turn left to hdg 360° within ½ mi and stay W of I-95 til 1500'. Rwy 23 dep, turn rgt to hdg 255° ASAP after passing EOR til 1500'. Rwy 23 arr, remain W of I-95 as practicable.
IFR Flight Procedures	
Flight Profile	
Military Ops	
Reference to Backmatter	See Special Notices – Airport XYZ Noise Abatement



Ex 4 Adjusted

- As is:
Voluntary NS ABTMT procedures in effect all times all acft. Voluntary curfew 0300–1200Z†. Use NBAA profiles std NS ABTMT apch and departure procedures. All acft use recommended departures: Rwy 05 left turn 360° stay W of interstate to 1500'; Rwy 23 rgt turn hdg 255° as soon as practicable after passing rwy end to 1500'; avoid residential areas, overfly mall area. For NS ABTMT info call 561–391–2202. Rwy 05 left turn out within 1/2 mile and proceed on crs course W of I-95. Arr Rwy 23 remain W of I-95 until as close in as practicable to avoid over flt of residential area. Rwy 23 departures turn to 255° as soon as practicable after passing rwy end. Noise sensitive arpt. Maintenance runups prohibited 0100–1300Z†.

- Adjusted:
NS ABTMT in eff 24 hrs. ALL ACFT Quiet Hrs 0300–1200Z. Maint runups proh 0100–1300Z. PREF RWY USE, Minimize reverse thrust, use full rwy. Int tkfs, SGL, and Str-in apch discouraged. TGL permitted Mon-Fri 1400–2200Z. NSA, avoid residential areas, ovfl mall. VFR, ALL ACFT, Rwy 05, left tfc pat. Rwy 23, rgt tfc pat. Rwy 05 make crosswind turn ASAP. Rwy 05 dep, turn left to hdg 360° within ½ mi and stay W of I-95 til 1500'. Rwy 23 dep, turn rgt to hdg 255° ASAP after passing EOR til 1500'. Rwy 23 arr, remain W of I-95 as practicable. See Special Notices – Airport XYZ Noise Abatement

