

Noise Abatement Information

Best Practices for Chart Supplement

Presented to: Aeronautical Charting Meeting 21-02

By: Kent Duffy, APP-400

Date: October 26, 2021



**Federal Aviation
Administration**

We are
Airports

Agenda

- **Overview and Recap**
- **Taxonomy and Examples**
- **Document Content**
- **Next Steps**



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

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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

⑲ → LAND AND HOLD-SHORT OPERATIONS

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

⑳ → RUNWAY DECLARED DISTANCE INFORMATION

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

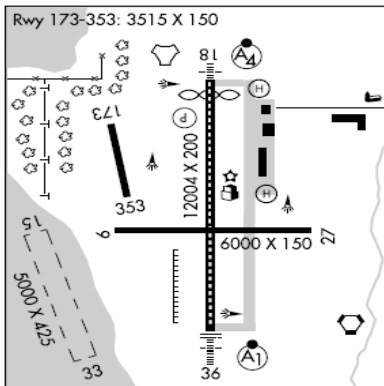
㉑ → ARRESTING GEAR/SYSTEM

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

㉒ → 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.

㉓ → NOISE: NS ABTMT Quiet Hrs 0300-1200Z. No eng or maint runups dur quiet hrs. No TGL or SGL dur quiet hrs.

㉔ → AIRPORT REMARKS: Special Air Traffic Rules-Part 93, see Regulatory Notices. Attended 1200-0300Z‡. Parachute Jumping.
Deer invof 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!



Project Recap

- **Intended Outcomes**

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

- **Implementation**

1. ‘Best Practices’ guidance document used by airports
2. ‘New’ noise abatement information will use best practices to develop entries for submission for the Chart Supplement
3. Airports with existing entries revise their entry in accordance with best practices (incrementally)



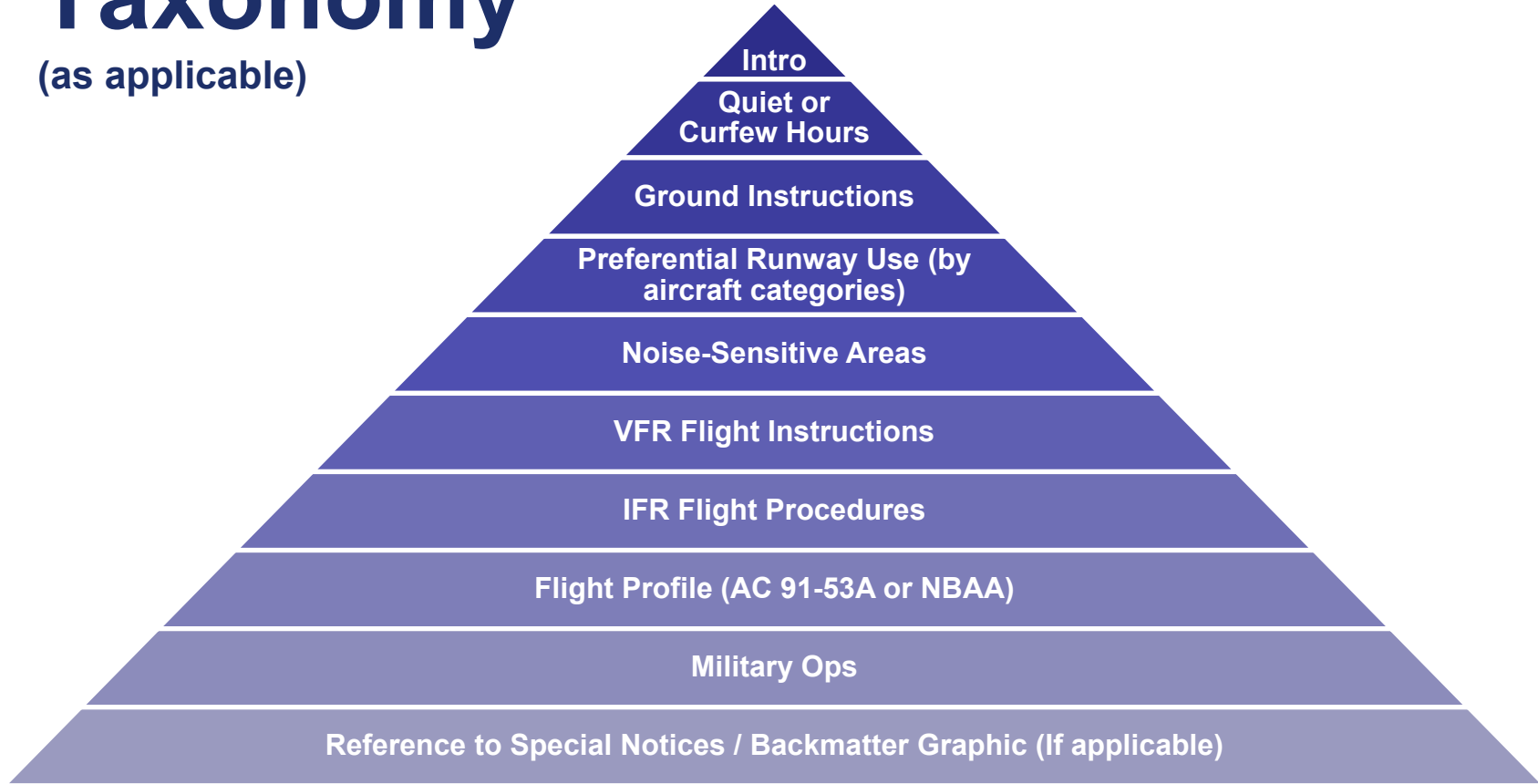
Feedback at 21-01 ACM

- **Q/A Themes:**
 - Accuracy of distance measures used in VFR instructions
 - Can someone fly to a point 1.76 NM mile from the EOR?
 - Ambiguity with Voluntary, Restrictions, etc.
 - Noise abatement voluntary unless otherwise noted
 - Informal and formal runway use programs under 14 CFR Part 91
 - VFR is always voluntary; IFR is repeatable and usable
 - Synchronize to IFR Procedures and ATC
 - Runway end signs have limited effectiveness, particularly IFR
 - Process for Implementation and QC review within FAA, and pilot feedback after publication



Taxonomy

(as applicable)



Noise Abatement Plan



Federal Aviation
Administration

Standardization

- **Consistent terminology and nomenclature:**
 - Noise Abatement Information or Instructions
 - Overuse of procedures to describe nearly everything
 - Procedures are charted Terminal Procedures, either IFR or CVFP.
 - Profiles (e.g., AC 91-53A or NBAA departure or arrival profiles)
 - Noise Sensitive Areas
 - Curfew Hrs if the restriction/discontinuation of operations during a specific time period is *mandatory*
 - Quiet Hrs if the limitation of operations during a specific time period is *voluntary*
- **Consistent use of abbreviations**
- **Times in Zulu; Altitudes in MSL, miles in NM, etc.**
- **Remove redundant and excessive wording**



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.



Ex 1 Taxonomy Application

Taxonomy Rules	New Text
Intro	Noise: eff 24 hrs.
Quiet or Curfew Hours	
Ground Instructions	
Preferential Runway Use	
Noise-Sensitive Areas	
VFR Flight Instructions	
IFR Flight Procedures	<p>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.</p> <p>File Binky Five DP.</p>
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:
NOISE eff 24 hrs. IFR File Binky Five DP. See Special Notices – XYZ Airport Noise Abatement



Example 2

- As is:
No touch and go ops are permitted
btw 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.



Ex 2 Taxonomy Application

Taxonomy Rules	New Text
Intro	Noise: eff 24 hrs.
Quiet or Curfew Hours	
Ground Instructions	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 Instructions	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:
NOISE 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.



Best Practices Document Content

Helping Airports ‘structure’ Noise Abatement Info

- **Organized around common themes in noise abatement instructions**
 - Quiet or Curfew Hours
 - Ground Instructions
 - Preferential Runway Use
 - Noise Sensitive Areas
 - VFR Track Instructions
 - IFR Flight Procedures
 - Profiles, etc.
- **Modular use within Taxonomy**

Quick Ref: Quiet or Curfew Hours

Example 1 – Time of day related instruction

Original – Full stop Idgs only Mon-Sat btn 0300-1300Z and Sun btn 0300-1700Z due to quiet hr

Revised – No TGL Mon-Sat 0300-1300Z and Sun 0300-1700Z due to quiet hrs

Example 2 – Quiet hours (Voluntary)

Original – Urge no ops 0400-1200Z

Revised – Quiet hrs 0400-1200Z

Example 3 – Simple specification of quiet hours

Original – NS ABTMT Quiet hr 0330-1130Z

Revised – Quiet hrs 0330-1130Z

Example 4 – Specifying voluntary is unnecessary

Original – Voluntary restrictions exist for all acft ops 0300-1200Z

Revised – Quiet hrs all acft ops 0300-1200Z

Example 5 – Limitations during quiet hours

Original – Acft rstd to full stop only btn 0300-1100Z

Revised – No TGL btn 0300-1100Z

Quick Ref: Preferential Rwy Use

Example 1 – Calm Wind Runway

Original – Rwy 03 is preferred for calm wind and NS ABTMT

Revised – Rwy 03 is pref for calm wind and NS ABTMT

Example 2 –Based on aircraft type

Original – Rwy 12R-30L is preferred arrival rwy for jet acft and Rwy 12L-30R is the preferred departure rwy for jet acft

Revised – Rwy 12R-30L is pref arr rwy and Rwy 12L-30R is pref dep rwy for jet acft

Example 3 – Arrivals and/or Departure Runways

Original – When wind and weather permit use Rwy 32 for arrival and Rwy 14 for departure

Revised – When wind and wx permit use Rwy 32 for arr and Rwy 14 for dep

Quick Ref: Ground Instructions

Example 1 – Touch and Go

Original – All acft must come to full stop

Revised – All acft no TGL.

Example 2 – Run up limitation by location

Original – No run ups authorized on any ramp

Revised – No run-ups auth on any ramp

Example 3 – Specific time of day provision

Original – Engine run-ups other than preft are ltd to hrs of 1500-0500Z weekdays and 1700-0500Z weekends and hol

Revised – Eng run-ups other than pre-flight limited to 1500-0500Z wk and 1700-0500Z weekends and hol

Example 4 – Engine Idling

Original – Lengthy engine idling and run-ups on ramp area are prohibited

Revised – Eng idling longer than 20¹ min and run-ups on ramp area are proh

Example 5 – Full Length Takeoffs

Original – All jet acft take-offs are to be initiated from end of rwy unless directed otherwise by twr

Revised – All jet acft no int tkf unless directed by twr

Note:

1 The purpose of the revision is to add a specific timeframe to the instruction

Quick Ref: Noise Sensitive Areas

Example 1 – Noise sensitive area directionally described but without distance indicators

Original – Noise sensitive area off the departure end of Rwy 27 to the west, southwest, and south, and off the departure end of Rwy 34 to the northwest

Revised – Avoid ovft of area off the dep end of Rwy 27 to the W, SW, and S, and off the dep end of Rwy 34 to the NW

Example 2 – Distance specifically indicated but not type of noise sensitive area

Original – Avoid over flight of noise sensitive area located 7 miles south of arpt

Revised – Avoid ovft of area 7 NM S of arpt

Example 3 – Type of noise sensitive area specifically described

Original – Avoid overflight of noise sensitive areas, church 1.8 mi NW of Rwy 25 end and village of Albany 2 mi E of apch end Rwy 25

Revised – Avoid ovft of church 1.8 NM NW of Rwy 25 end and village of Albany 2 NM E of apch end Rwy 25

Example 4 – Multiple specific noise sensitive areas described with locations and distances

Original – Noise abatement sensitive area: 2 miles N of Rwy 17; 1 mile SE of Rwy 35; half-mile SW of Rwy 35

Revised – Avoid ovft of area 2 NM N of Rwy 17; 1 NM SE of Rwy 35; .5 NM SW of Rwy 35

Example 5 – Non-linear distance used to describe noise sensitive area

Original – Noise sensitive area 1.5 miles in radius off north end of Rwy 15-33

Revised – Noise sensitive area 1.5 NM in radius off N end of Rwy 15-33

Quick Ref: VFR Track Instructions

Example 1 – Sequential Steps

Original – VFR departures Rwy 21 turn left 10° over SMO VOR then turn right 225°

Revised – VFR dep, Rwy 21 turn left 10° over SMO VOR then turn rgt 225°

Example 2 – Altitudes

Original – 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 heading until reaching 1000', then on crs

Revised – Rwy 05 turn left hdg 020° til 1000' MSL, then on crs; Rwy 23 turn left hdg 210° til 1000' MSL then on crs; Rwy 33 fly rwy hdg til 1000' MSL then on crs

Example 3 – Without specific headings

Original – Avoid flying over residential area at departure end of Rwy 18 during both takeoff and landing, avoid low alt and/or high-power settings in this area

Revised – Avoid ovft of res area at dep end of Rwy 18 during both tkf and ldg, avoid low alt and/or high-pwr settings in this area

Example 4 – Multiple Options

Original – On dep maintain rwy hdg to 1100' MSL or the end of the rwy (whichever occurs last) prior to turning

Revised – On dep mant rwy hdg til 1100' MSL or the end of the rwy (whichever occurs last) prior to turn

Example 5 – Multiple Steps

Original – Acft departing Rwy 16 fly rwy heading to 1945' MSL (1000' AGL) and 2 NM before left turn

Revised – Acft dep Rwy 16 fly rwy hdg til 1945' MSL and 2 NM before left turn

Next Steps

- **Concurrently**
 - Brief to airport organizations (ACI, AAAE, ACC, etc.)
- **Winter**
 - Draft best practices document shared for review/comment
- **Spring**
 - Further industry collaboration towards finalizing document
- **Coming:**
 - Develop process for airport submission to FAA (ARP then ATO)



Q/A?



- **Kent Duffy**
- **FAA Airport Division (ARP)**
- Kent.Duffy@faa.gov
- 202.267.3961



Backup

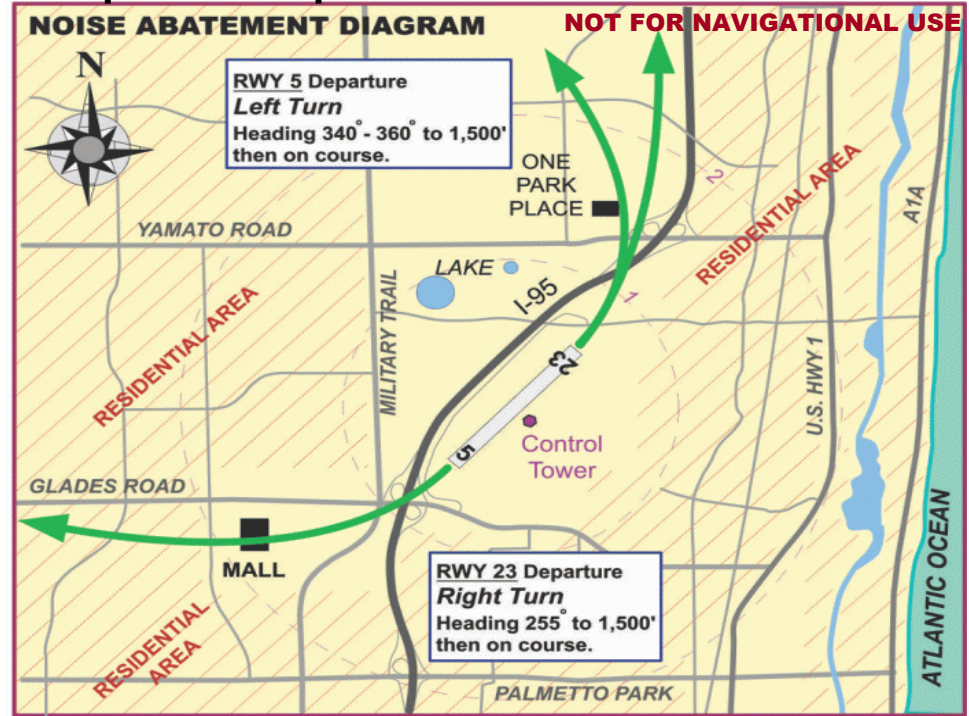


Back Matter Graphic Inclusion

Complex Example 1a

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.

Complex Example 1a



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
Quiet or Curfew Hours	ALL ACFT, Quiet Hrs 0400-1100Z.
Ground Instructions	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 Instructions	
IFR Flight Procedures	IFR, File RNAV (GPS) Y RWY 21L.
Flight Profile	PROF, Jet acft fly close-in NADP.
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:
NOISE 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, file RNAV (GPS) Y RWY 21L. PROF, Jet acft fly close-in NADP.



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

