

Airports

Vineet Awasthy – June 2026

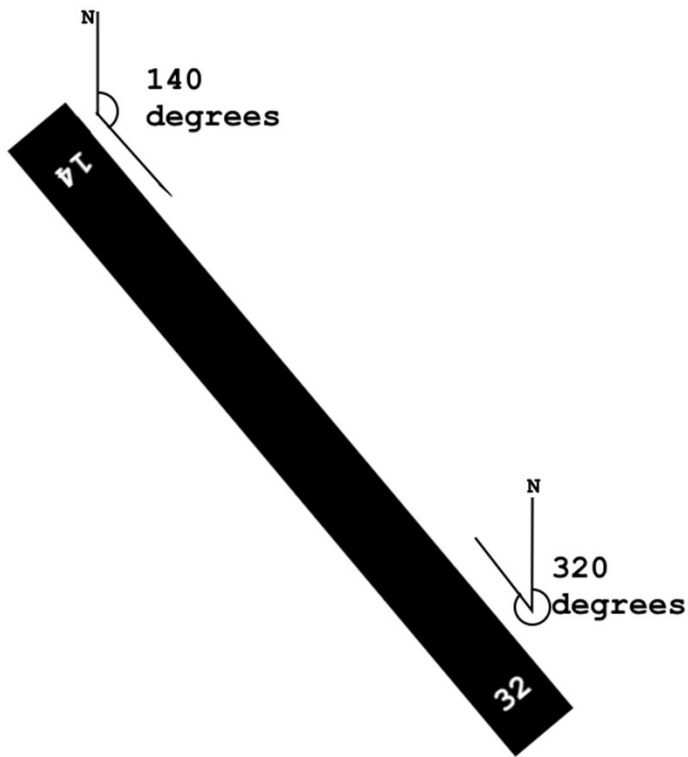
How does navigating within airports differ from normal city navigation?

- Aircraft taxiing vs landing/taking off are at different speeds
- Confusing at night (and lighting might be blinding)
- Layout is flat and featureless
- Pilots may be unfamiliar – standard is important
- Not the purpose of a plane (e.g. visibility, mirrors)
- No addresses
- Errors are costly

Types of airports

- Towered (about 500)
 - Examples: KBOS, KBED, KASH, KPVD, KMHT
 - Most of these towers are not open 24/7 – become non-towered the rest of the time (e.g. KBED, KASH, KPVD)
- Non-towered public-use airports (about 4,500)
 - Examples: KEEN, 6B6, KFIT
- Non-towered private airports (about 15,000)
 - Examples: Pepperel

Runway



- Each physical runway has **two** designations according to **magnetic** heading
- Runway 2 and 20 share the same pavement, may not be used at the same time
- Main parameter for runway selection: wind

AIRPORT DIAGRAM

22083
AL 668 (FAA)

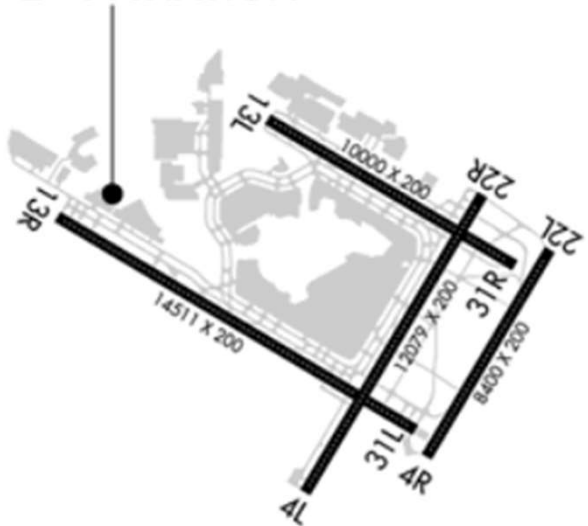
DILLANT/HOPKINS (E/E/N)
KEENE, NEW HAMPSHIRE

AWOS-3PT
119.025
CTAF/UNICOM
123.0

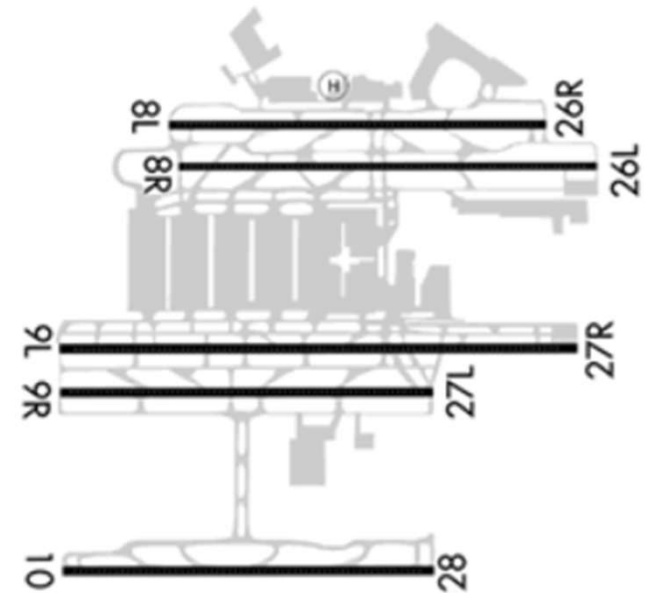
ELEV 472
TERMINAL
0.7% UP
141.2
ELEV 482
HANGAR
ELEV 482
42°54'N
ELEV 482
301.2
42°54'N
JANUARY 2020
ANNUAL RATE OF CHANGE
0.1° E
70° 17' W
RWY 02-20
RCL 40 F/C/X/T
D-60
RWY 14-32
RCL 8 F/C/X/T
S-25
FIELD
ELEV
488
A1
A2
A
596±
72°17'W
72°16'W
42°53'N

More than one runway sharing the same magnetic heading

**MODERN
AVIATION**



ATLANTIC



Runway markings



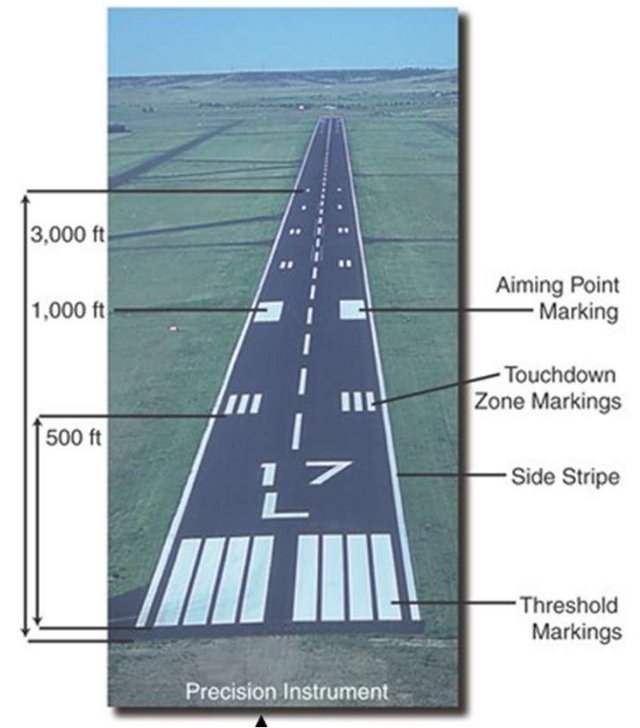
Visual



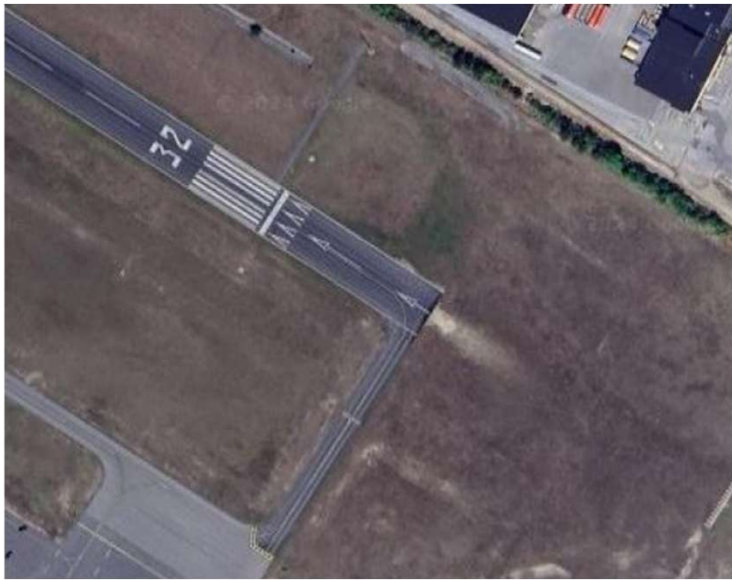
Non-Precision



Precision



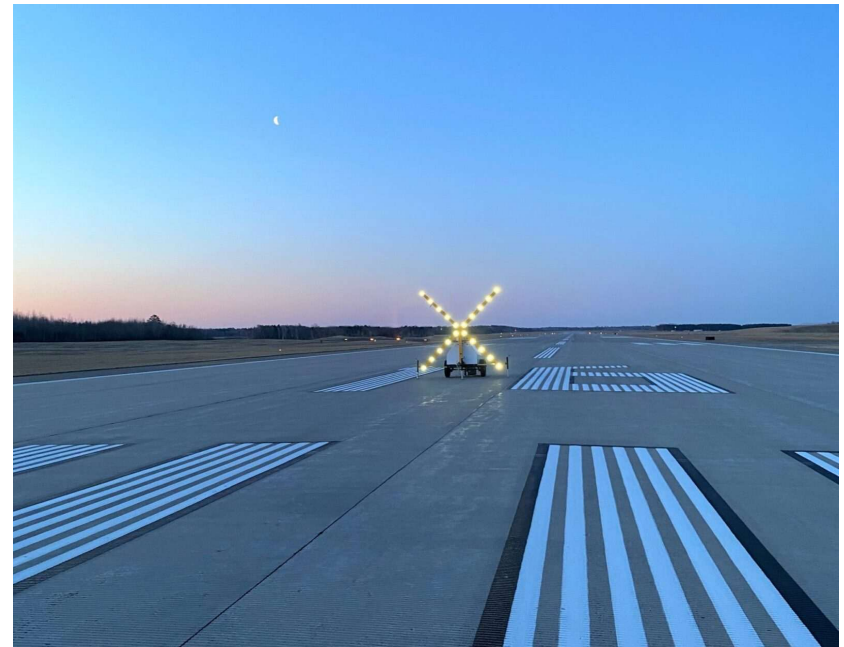
Displaced Threshold, Blastpad/Stopway, Yellow Demarcation Bar



Relocated threshold



Closed runway/taxiway (permanent or temp)



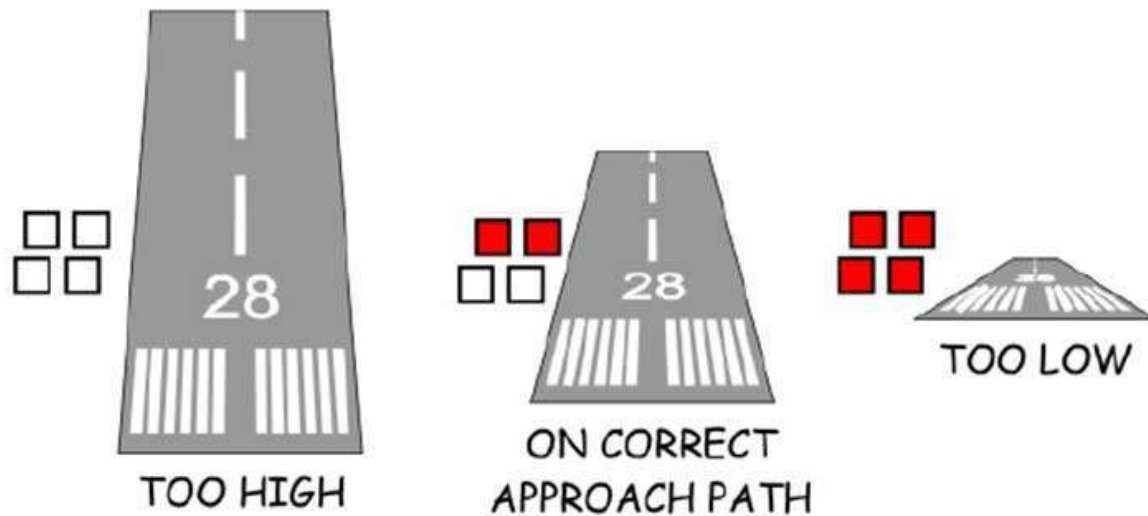
Runway distance remaining sign



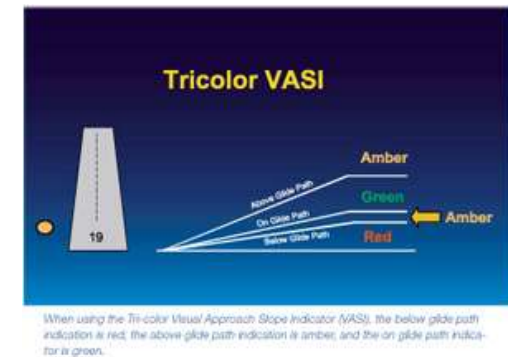
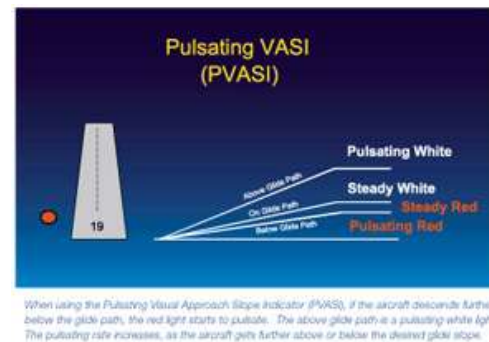
Precision Approach Path Indicator (PAPI)



Visual Approach Slope Indicator (VASI)



Three bar VASI, Pulsating VASI, Tricolor VASI (these are far less common)



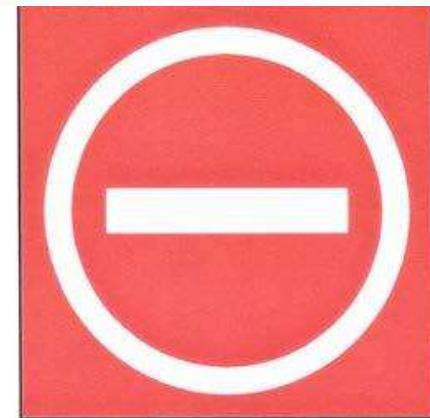
Taxiways – denoted with letter (A) / multiple letters
(MC) / letters and numbers (A2)
Taxiway center markings (sometimes edges too)



Location signs (you are here) - Yellow on Black
Direction signs (to places) – Black on Yellow



Mandatory information signs – White on Red



Which runway configuration is correct?



5-23

OR



5-23

Information signs

**NOISE ABATEMENT
PROCEDURES IN EFFECT
2300 - 0500**

**VOR 115.4
270° 0.2 NM**

Location, Direction and Mandatory Information signs commonly combined together



....sometimes on pavement



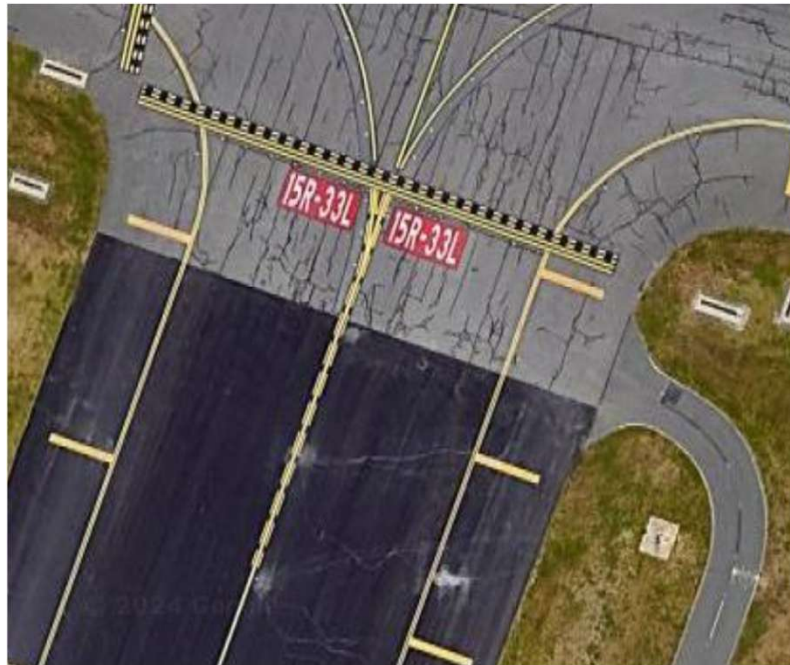
Non-movement area boundary



Runway holding point marking



Enhanced Taxiway Centerline (up to 150')
Indicates approaching runway hold position markings



ILS critical area

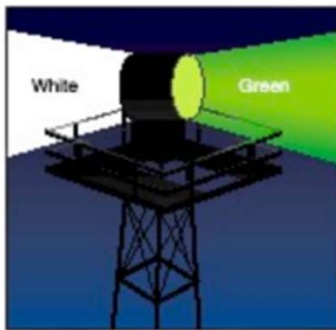


Airport lighting

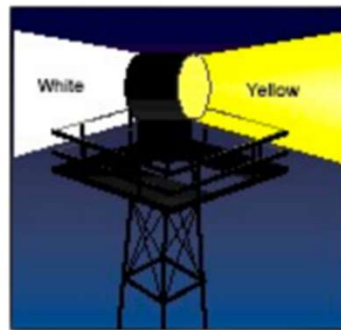
- Airport lights
- Runway & approach lights
- Taxiway lights

Airport lighting

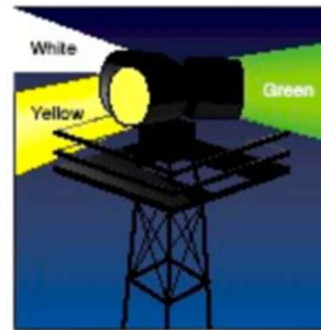
- **Airport lights**
- Runway & approach lights
- Taxiway lights



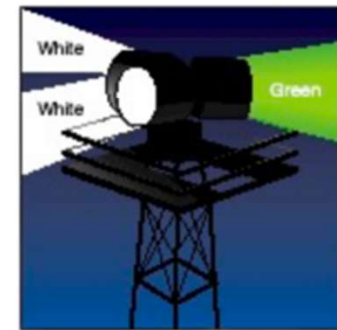
Civilian Land Airport



Water Airport



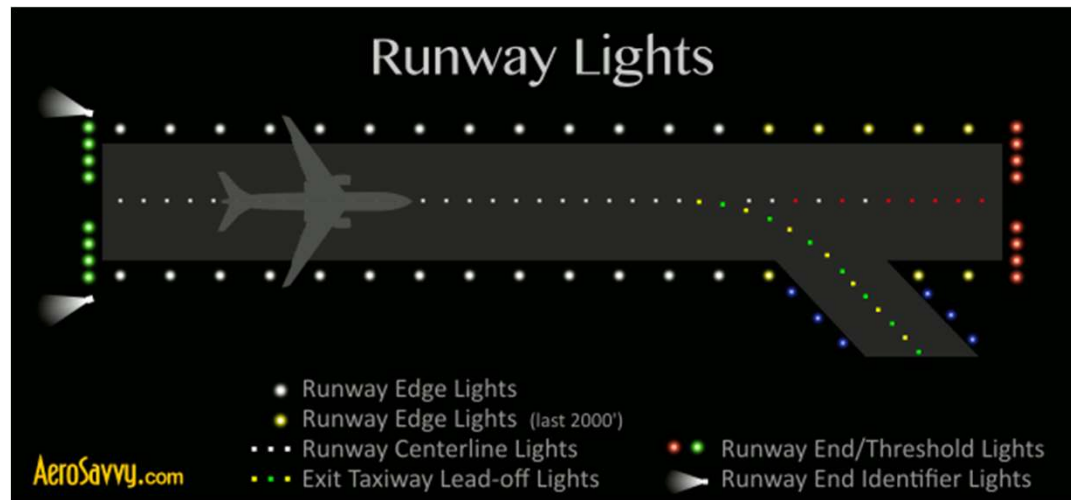
Heliport



Military Airport

Airport lighting

- Airport lights
- **Runway & approach lights**
- Taxiway lights



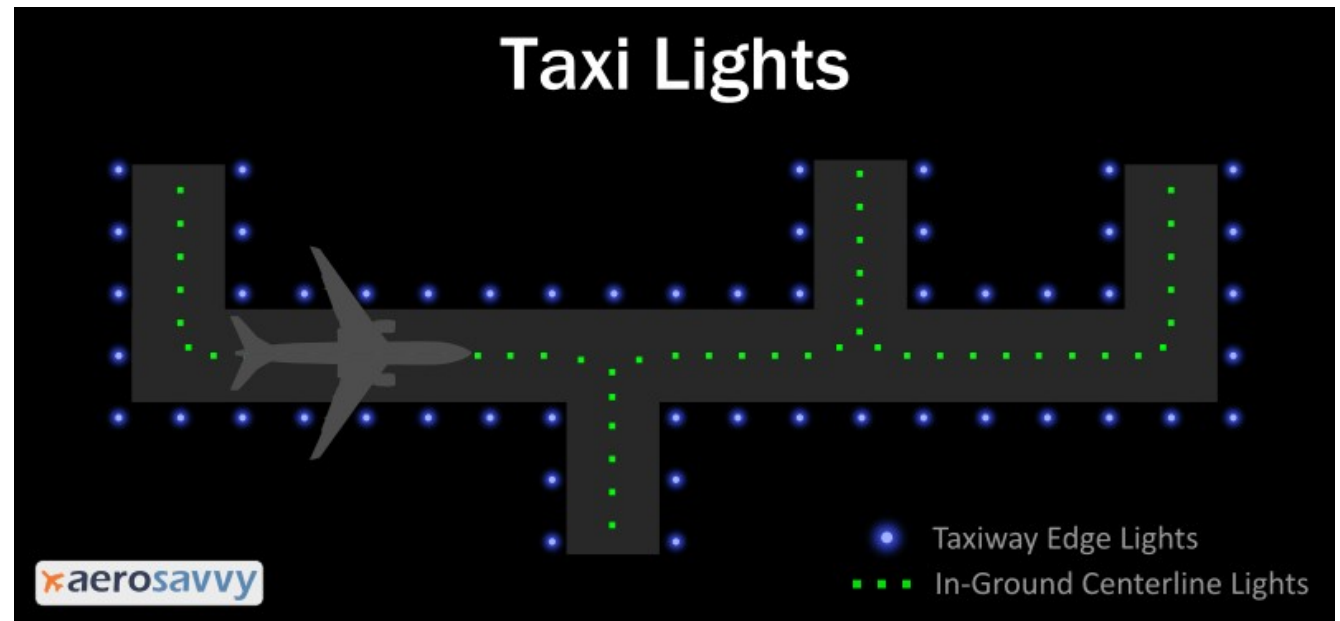
Airport lighting

- Airport lights
- **Runway & approach lights**
- Taxiway lights



Airport lighting

- Airport lights
- Runway & approach lights
- **Taxiway lights**



What to do at non-towered fields?

- Most use pilot-controlled lighting (PCL)
- Typically PCL available on CTAF (Common Traffic Advisory Frequency)
 - check chart supplement.
- Typically:
 - 5 clicks to turn on
 - 3 clicks low, 5 clicks medium, 7 clicks high
 - Sometimes certain parts of lighting system unavailable via PCL

Segmented Circle

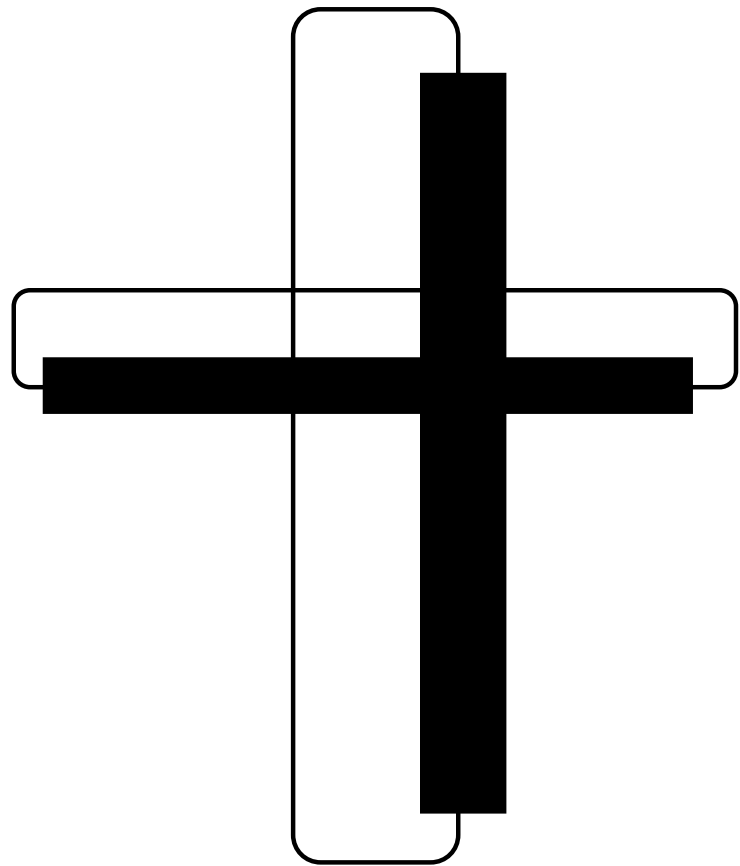
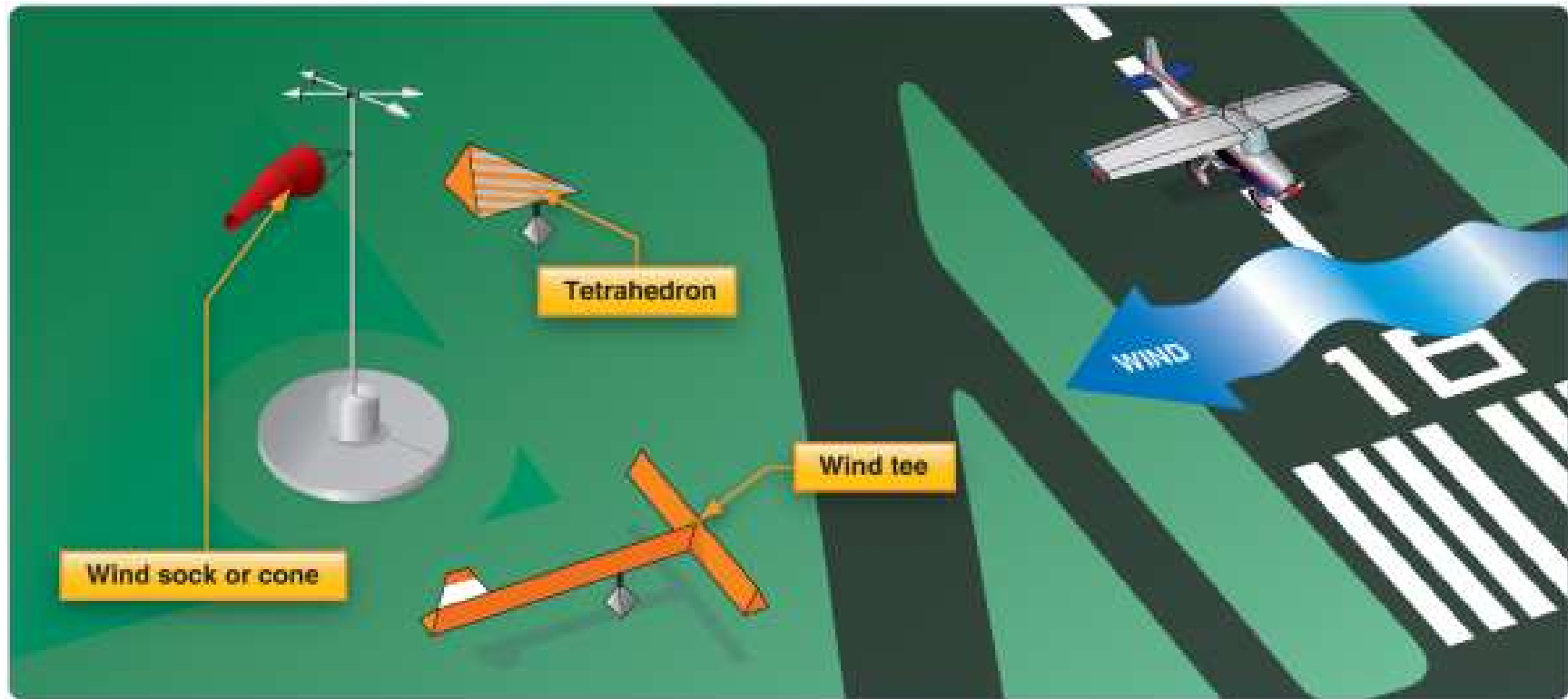
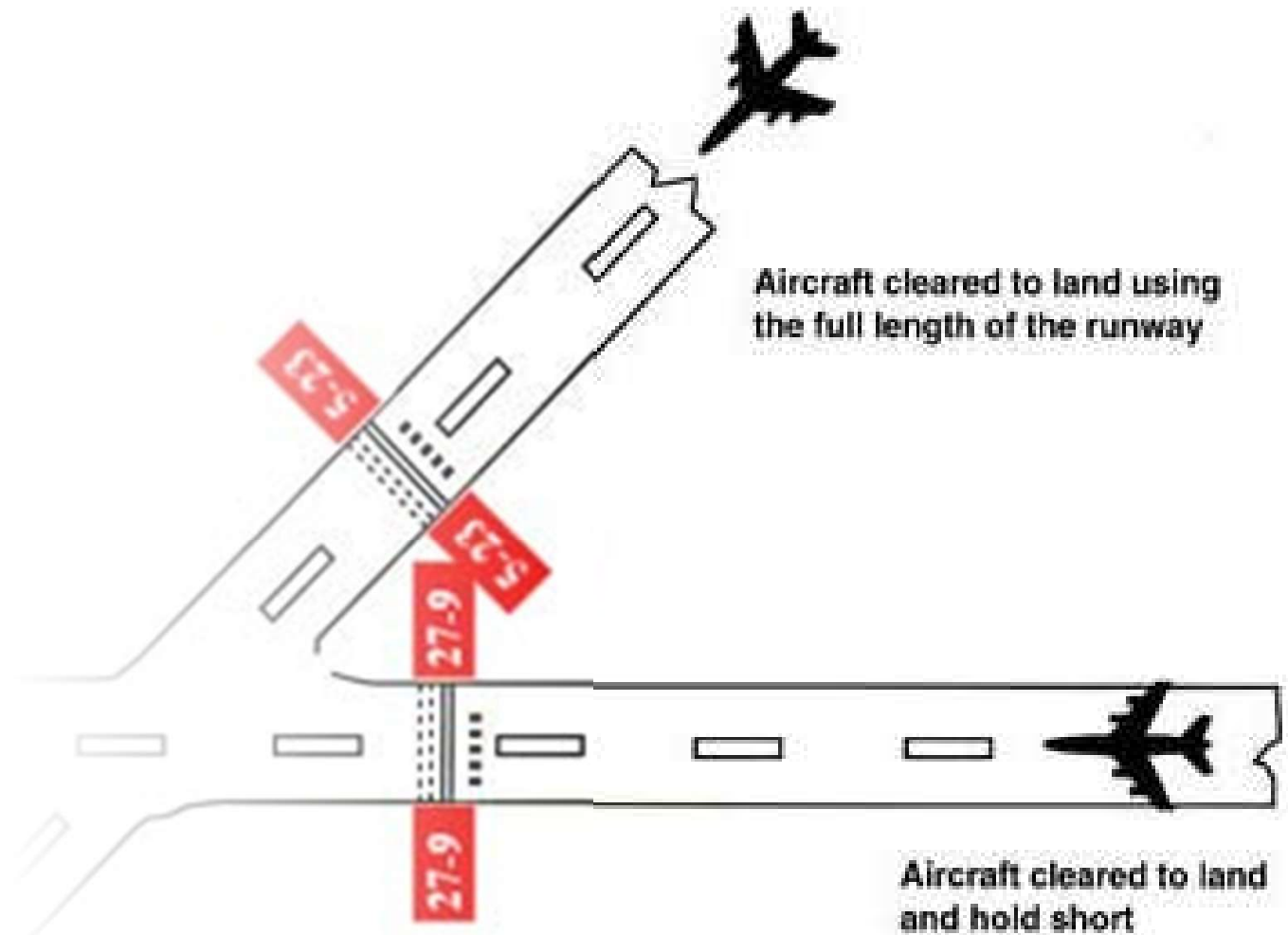


FIGURE 64.—Airport Landing Indicator.

Segmented Circle



LAHSO



LAHSO

- Land and Hold Short Operations
- Allows operating out of intersecting runways
- To participate:
 - Know your landing performance
 - Be familiar with the airport (ALD) and have 1,000' to spare
 - Hold at least Private Pilot certificate
- Participation is optional, but if you accept, you **must** abide
- A go-around is always allowed

LAHSO

- Information available in chart supplement

BEDFORD

LAURENCE G HANSCOM FLD (BED)(KBED) P (AF) 0 NE UTC-5(-4DT) N42°28.20'

W71°17.34'

132 B TPA—See Remarks Class I, ARFF Index B NOTAM FILE BED

RWY 11-29: H7011X150 (ASPH-GRVD) S-120, D-250, 2S-127,

2D-455 PCN 82 F/C/W/T HIRL

RWY 11: MALSR. PAPI(P4L)—GA 3.0° TCH 67'. RVR-T Hill.

RWY 29: MALSR. PAPI(P4R)—GA 3.0° TCH 52'. RVR-R

RWY 05-23: H5107X150 (ASPH-GRVD) S-120, D-250, 2S-149,

2D-436 PCN 79 F/C/W/T MIRL

RWY 05: REIL. PAPI(P4L)—GA 3.5° TCH 55'.

RWY 23: REIL. PAPI(P4R)—GA 3.2° TCH 55'.

LAND AND HOLD-SHORT OPERATIONS

LDG RWY	HOLD-SHORT POINT	AVBL LDG DIST
RWY 05	11-29	3000
RWY 11	05-23	2650
RWY 29	05-23	3662

RUNWAY DECLARED DISTANCE INFORMATION

RWY 05: TORA-5107 TODA-5107 ASDA-5107 LDA-5107
RWY 11: TORA-7011 TODA-7011 ASDA-7011 LDA-7011
RWY 23: TORA-5107 TODA-5107 ASDA-5107 LDA-5107
RWY 29: TORA-7011 TODA-7011 ASDA-7011 LDA-7011

SERVICE: S4 FUEL 100LL, JET A OX 1, 2, 3, 4 LGT Actvt MALSR

Rwy 11 and 29; REIL Rwy 05 and 23; HIRL Rwy 11-29; MIRL Rwy 05-23; twy lgtS—118.5. **MILITARY—JASU** 3(A/M32A-86) 2(MA-1A) FUEL 100LL, A **TRAN ALERT** Opr 1200-0400Z† wkd; 1400-2200Z† Sun; PPR OT and hol DSN 845-5589/5592. De-icing avbl fr vendor. Ltd hgr space and extremely ltd maint. Fleet svc avbl fr vendor. Mil acft must arng for prkg on east ramp with tran alert or vendor.

NOISE: Noise rules in effect, helicopters opr within controlled airspace are rqrd to maintain highest possible alt. Voluntary noise abatement procs in efct ctc amgr 671-212-6592. Noise sensitive historic area S of arpt; for Rwy 23 dep cont rwy hdg to 1000 ft AGL, turning crosswind ovr Rte 2.

AIRPORT REMARKS: Attended continuously. Birds and wildlife on and invof arpt. PPR for all acft carrying explosives call 617-212-6592. PPR for maint eng run-ctc amgr. No plas/tgls for acft 12,500 lbs and over. No plas/tgls for acft under 12,500 lbs 0400-1200Z†. Be alert for small acft parked on ramps. Rwy 29 right tfc acft over 12,500 lbs.

TPA—1132(1000) fixed wing, 1632(1500) turbojet, 1932(1800) heavy jet acft. Clsd to Part 121 ACR ops with over 60 seats excp 24 hr PPR call 781-869-8000. Twy C, F, J, N, R, S, T, Twy M south of Twy E & Twy G btn Rwy 11-29 & Rwy 05-23 clsd to acft gtr than 118 ft wingspan. Twy R clsd to ACR ops—GA use only. Twy R1, R2 clsd to acft gtr than 49 ft wingspan. Surcharge for each ldg and dep 0400-1200Z†. Coml and tsnt ldg fee. Flight Notification Service (ADCUS) avbl. User fee arpt. NOTE: See Special Notices—Arrival Alert.

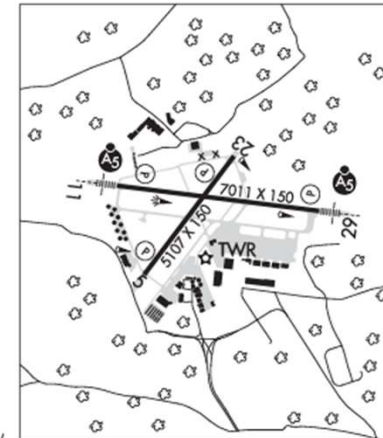
AIRPORT MANAGER: 617-212-6592

NEW YORK

COPTER

H-11D, 12K, L-33D, 34J

IAP, AD



FITCHBURG MUNI (FIT)(KFIT) 3 SE UTC-5(-4DT) N42°33.23' W71°45.55'

345 B TPA—1347(1002) NOTAM FILE FIT

RWY 14-32: H5001X100 (ASPH-GRVD) S-30, D-41 MIRL

0.3% up NW

RWY 14: REIL. PAPI(P4L)—GA 3.0° TCH 40'. Thld displcd 163'. Trees.

RWY 32: REIL. PAPI(P4L)—GA 3.5° TCH 46'. Thld displcd 300'. Trees.

RUNWAY DECLARED DISTANCE INFORMATION

RWY 14: TORA-5001 TODA-5001 ASDA-4701 LDA-4538

RWY 32: TORA-5001 TODA-5001 ASDA-4838 LDA-4538

SERVICE: S4 **FUEL** 100LL, JET A, A+ **LGT ACTVT** REIL Rwy 14 and 32; PAPI Rwy 14 and 32; MIRL Rwy 14-32—123.0. Rotg bcn not avbl during dalgt IFR conds. Rwy 14 PAPI unusbl byd 5 degs L and R of cntrln.

NOISE: Noise Sensitive Area: Dep acft climb to TPA bfr turning crosswind

AIRPORT REMARKS: Attended 1300-2200Z±. Wildlife on and invof arpt. Ldg fee for corporate and commercial flts only. Cold temperature airport.

Altitude correction required at or below -21C.

AIRPORT MANAGER: 618-681-1771

WEATHER DATA SOURCES: ASOS 135.175 (978) 343-9121.

COMMUNICATIONS: CTAF/UNICOM 122.7

RCO 122.5 (BRIDGEPORT RADIO)

® **BOSTON APP/DEP CON** 124.4

CLEARANCE DELIVERY PHONE: For CD ctc Boston Apch at 603-594-5552.

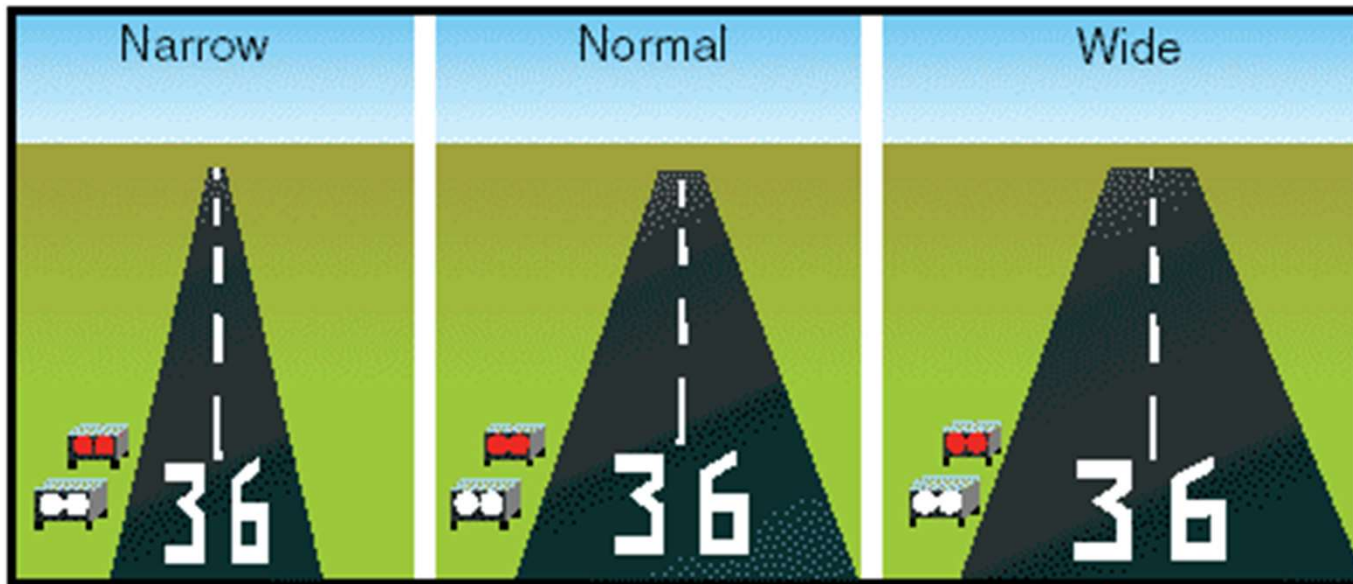
RADIO AIDS TO NAVIGATION: NOTAM FILE BDR.

GARDNER (VL) (L) VOR/DME 116.95 GDM Chan 116(Y) N42°32.76' W72°03.49' 102° 13.3 NM to fld.
1280/14W.

NEW YORK
H-11D, 12K, L-33C, 34J
IAP



Common illusions



Common illusions

