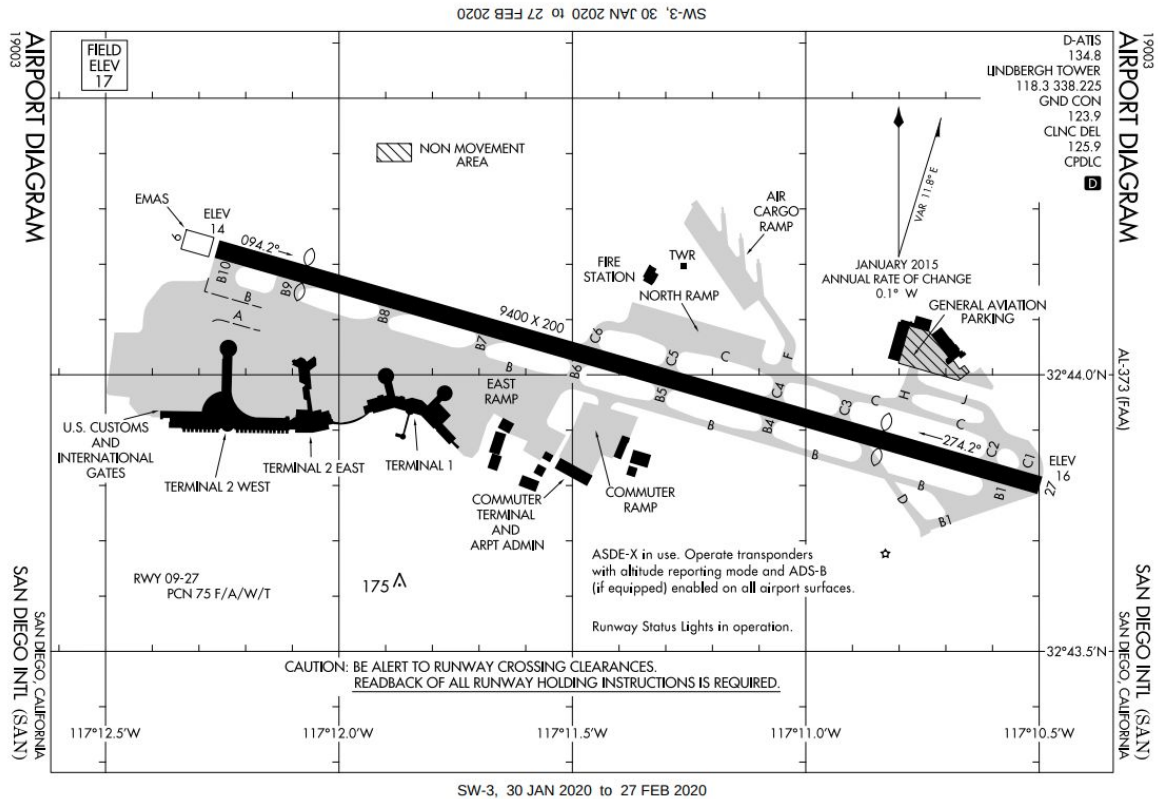# M6932 Tutorial 5: Airport Operations

Exercise 1: Airport Diagram

What is the name of the airport?
San Diego International Airport

What is the identifier for the airport?
SAN

What period of time is this airport diagram valid?
30 JAN 2020 to 27 FEB 2020

How many runways?
Two runways

What are the runway names?
Runway 09 and Runway 27

What is the magnetic heading of each runway?
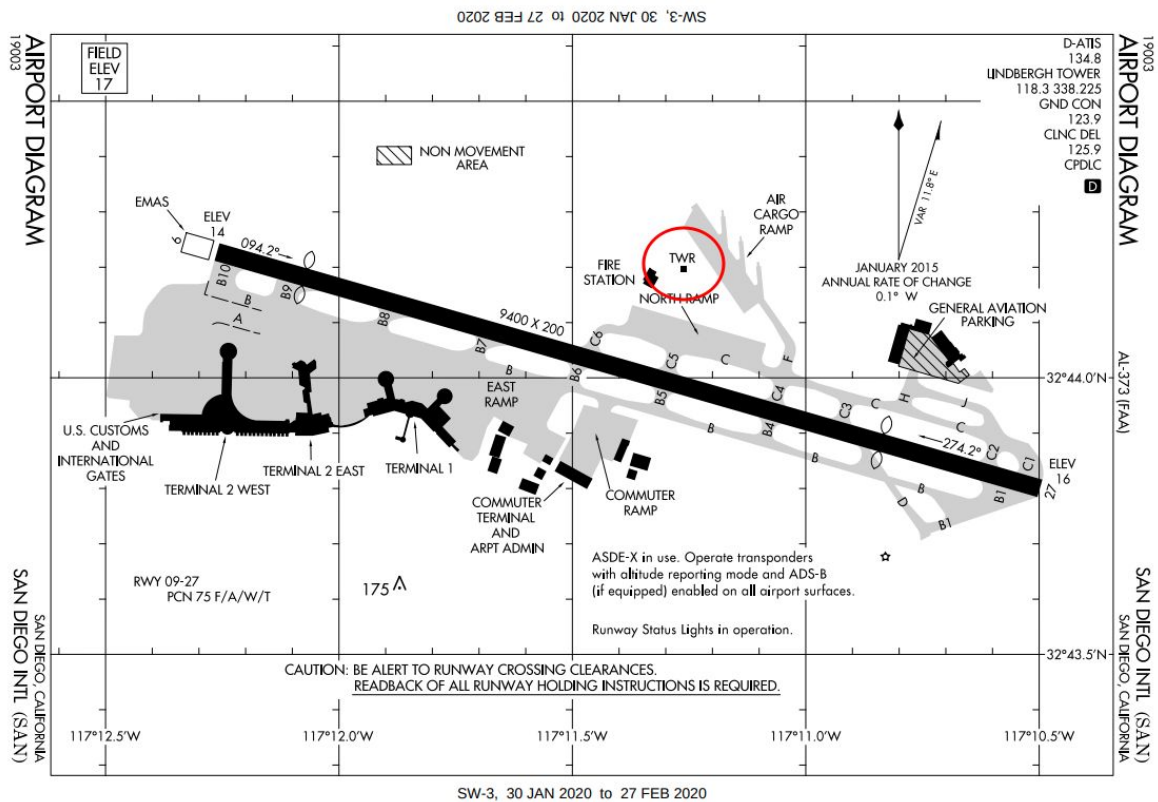Runway 9 = 094.2°, Runway 27 = 274.2°

What is the difference between magnetic heading and true heading at this airport?
11.8° East

How fast is magnetic heading changing at this airport?
0.1° W per year

Locate ATC control tower

AIRPORT DIAGRAM
19003

FIELD ELEV 17

NON MOVEMENT AREA

EMAS
ELEV 14
094.2°
B10
B9
B8
B7
9400 X 200
B6
B
EAST RAMP
B5

U.S. CUSTOMS AND INTERNATIONAL GATES
TERMINAL 2 WEST
TERMINAL 2 EAST
TERMINAL 1
COMMUTER TERMINAL AND ARPT ADMIN
COMMUTER RAMP

AIR CARGO RAMP
FIRE STATION
TWR
NORTH RAMP
C6
C5
C
F
C4
C3
C2
C1
B4
B3
B2
B1
274.2°

D-ATIS 134.8
LINDBERGH TOWER 118.3 338.225
GND CON 123.9
CLNC DEL 125.9
CPDLC
D

VAR 11.8° E

JANUARY 2015 ANNUAL RATE OF CHANGE 0.1° W

GENERAL AVIATION PARKING

AIRPORT DIAGRAM
19003

32°44.0'N

AL-373 (FAA)

ELEV 16

ASDE-X in use. Operate transponders with altitude reporting mode and ADS-B (if equipped) enabled on all airport surfaces.

Runway Status Lights in operation.

RWY 09-27
PCN 75 F/A/W/T
175 ∧

32°43.5'N

CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES.
READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS REQUIRED.

SAN DIEGO, CALIFORNIA
SAN DIEGO INTL (SAN)

117°12.5'W   117°12.0'W   117°11.5'W   117°11.0'W   117°10.5'W

SAN DIEGO INTL (SAN)
SAN DIEGO, CALIFORNIA

What is the field elevation for the airport?
17

Runway 9 Characteristics: What is the magnetic heading?
094.2°

Runway 9 Characteristics: What is the touchdown zone elevation?
14

Runway 9 Characteristics: How long is the runway?

9400 feet

**Runway 9 Characteristics: How wide is the runway?**
200 feet

Runway 27 Characteristics: What is the magnetic heading?
274.2°

Runway 27 Characteristics: What is the touchdown zone elevation?
16

Runway 27 Characteristics: How long is the runway?
9400 feet

Runway 27 Characteristics: How wide is the runway?
200 feet

Any runway crossing alerts?
Yes, be alert to runway crossing clearances. Readback of all runway holding instructions is required.
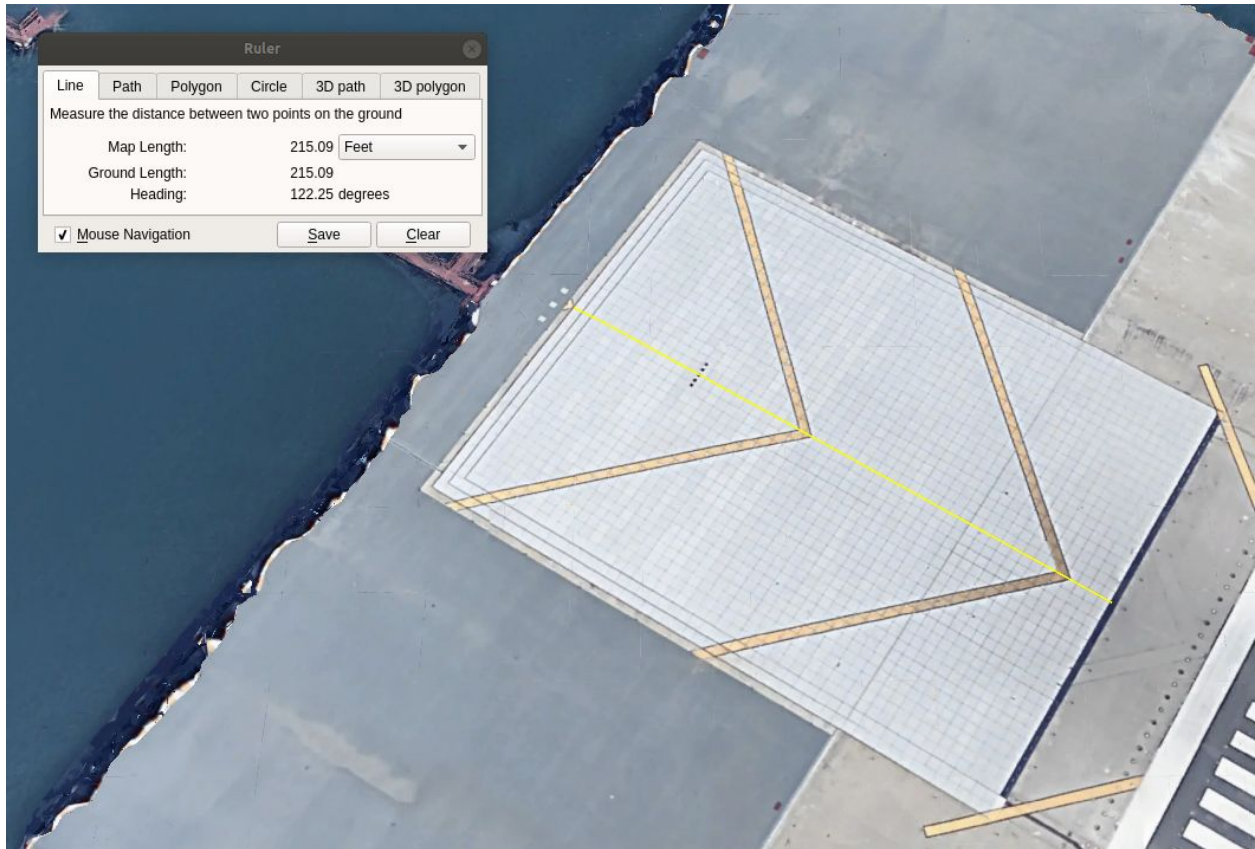
Exercise 2: EMAS Systems

Use Google Earth and estimate the length of the EMAS systems installed at Runways ends 4 and 31

Length of EMAS system at **Runway 4** end is around **215 feet**
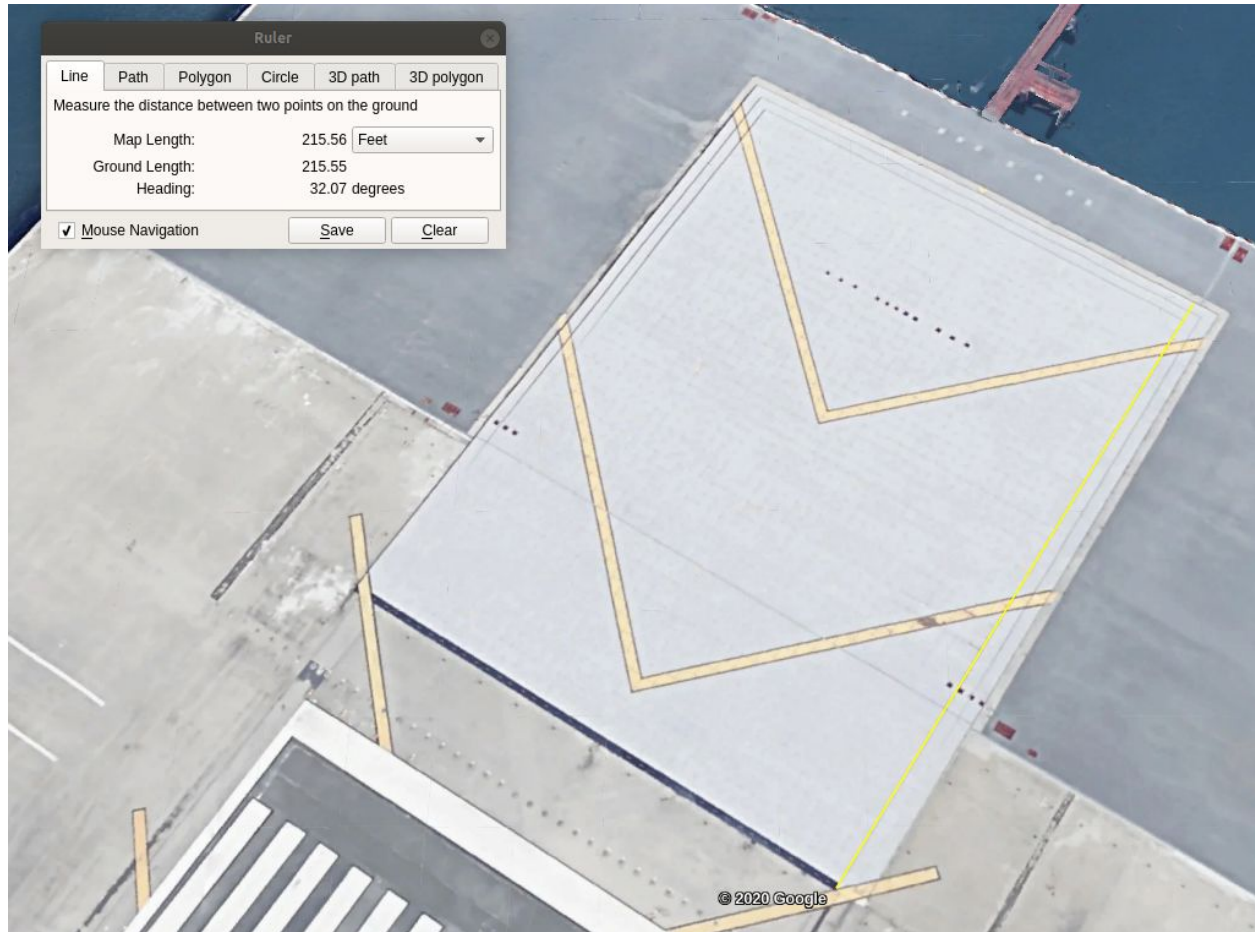
Length of EMAS system at **Runway 31** end is around **215 feet**

Using the guidance of the Advisory Circular 150/5220-22A, estimate the length of an EMAS installation to stop the critical aircraft at the design speed of 70 knots.
450 feet (including 75 feet set-back)

If the values estimated in parts (a) and (b) are not the same, estimate the maximum exit speed the EMAS systems at LGA would contain the critical aircraft. Explain.
Since there is a 32 feet set-back between the EMAS bed and runway ends of both 4 and 31, the EMAS length is given as 215 + 32 = **247 feet**, and hence the maximum exit speed would be around **44 knots**.

Exercise 3: Declared Distances

Using the declared distance concept, find the Landing Distance Available (LDA) for aircraft landing on Runway 27. In your analysis, provide Runway Safety Area (RSA) protection. There is no EMAS at this airport.

9300 + 520 - 1000 = **8820 feet**.

Find the Accelerate and Stop Distance Available (ASDA) while taking off on Runway 27.

8820 feet