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SUBCOMMITTEE TO CREATE SLIDE SETS ON THE SEPTEMBER 19, 1985 MEXICO EARTHQUAKE

MEXICO - SET I: GENERAL OVERVIEW

MEMBERS:

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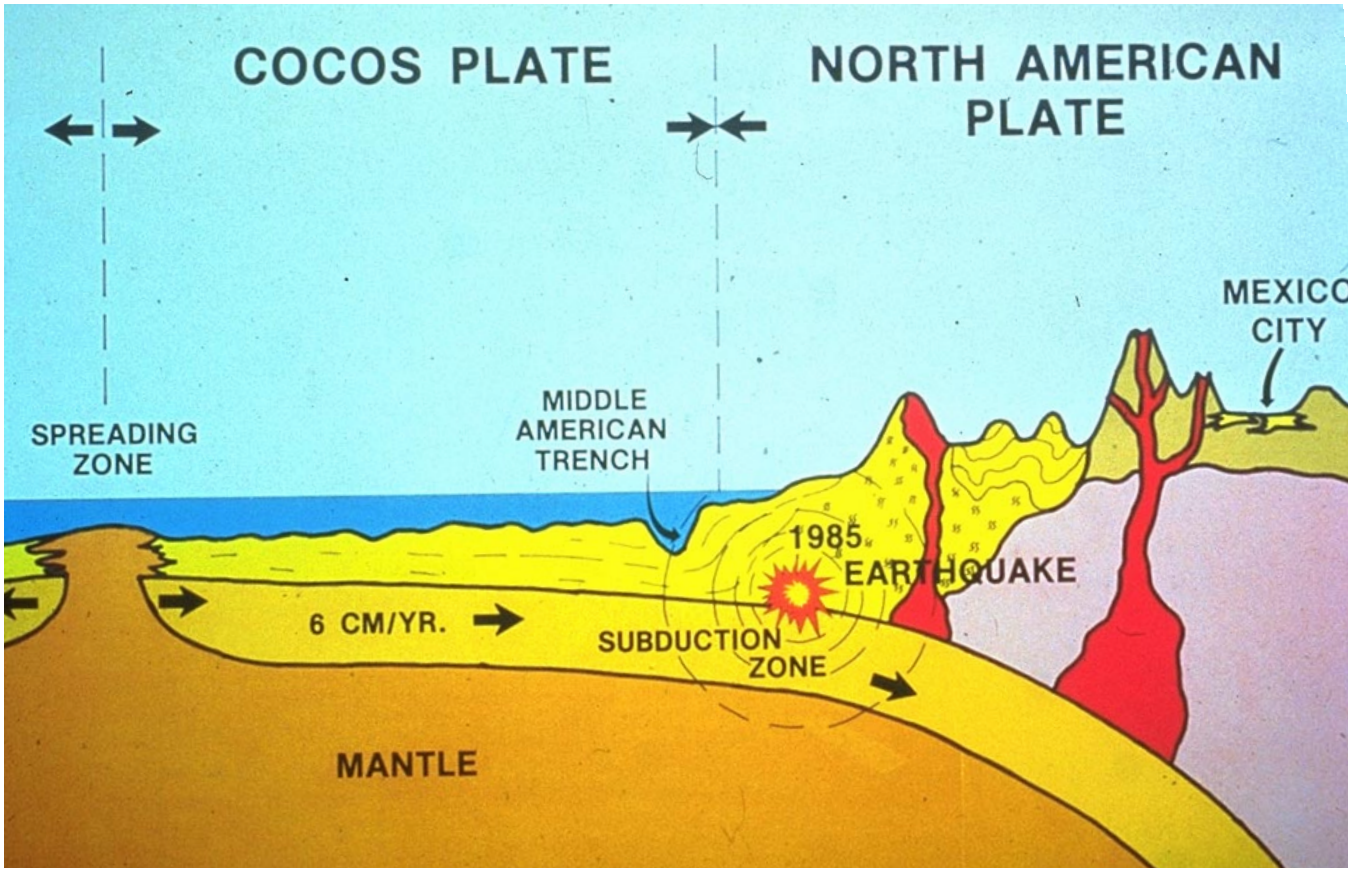
FEBRUARY 1987

BACK TO MAIN MENU



Cocos and North American Plate Intersection

Prepared 10/85

Geologic profile across the Cocos and North American plates showing subduction zone and rate of movement per year. This is a high seismicity zone having frequent large earthquakes.

Artwork prepared by U.S. Geological Survey

William Stone (NBS)

Mexico City Aerial View

Time and Location of Slide:: 9/26/85

Aerial view of Mexico City showing the central historic district and the Latino Americana tower. The density of buildings and the large proportion of undamaged buildings can be seen.

Location of Accelerograph Stations

Prepared 10/85

Location of three key accelerograph stations whose records were available shortly following the quake. The SCT station gave the best record for the zone of heavy damage.

Artwork prepared by National Bureau of Standards (NBS) Data provided by Universidad Nacional Autonoma de Mexico (UNAM)

Slide #3

William Stone (NBS)

Aerial View of SCT Looking Southwest

Time and Location of Slide: 9/26/85

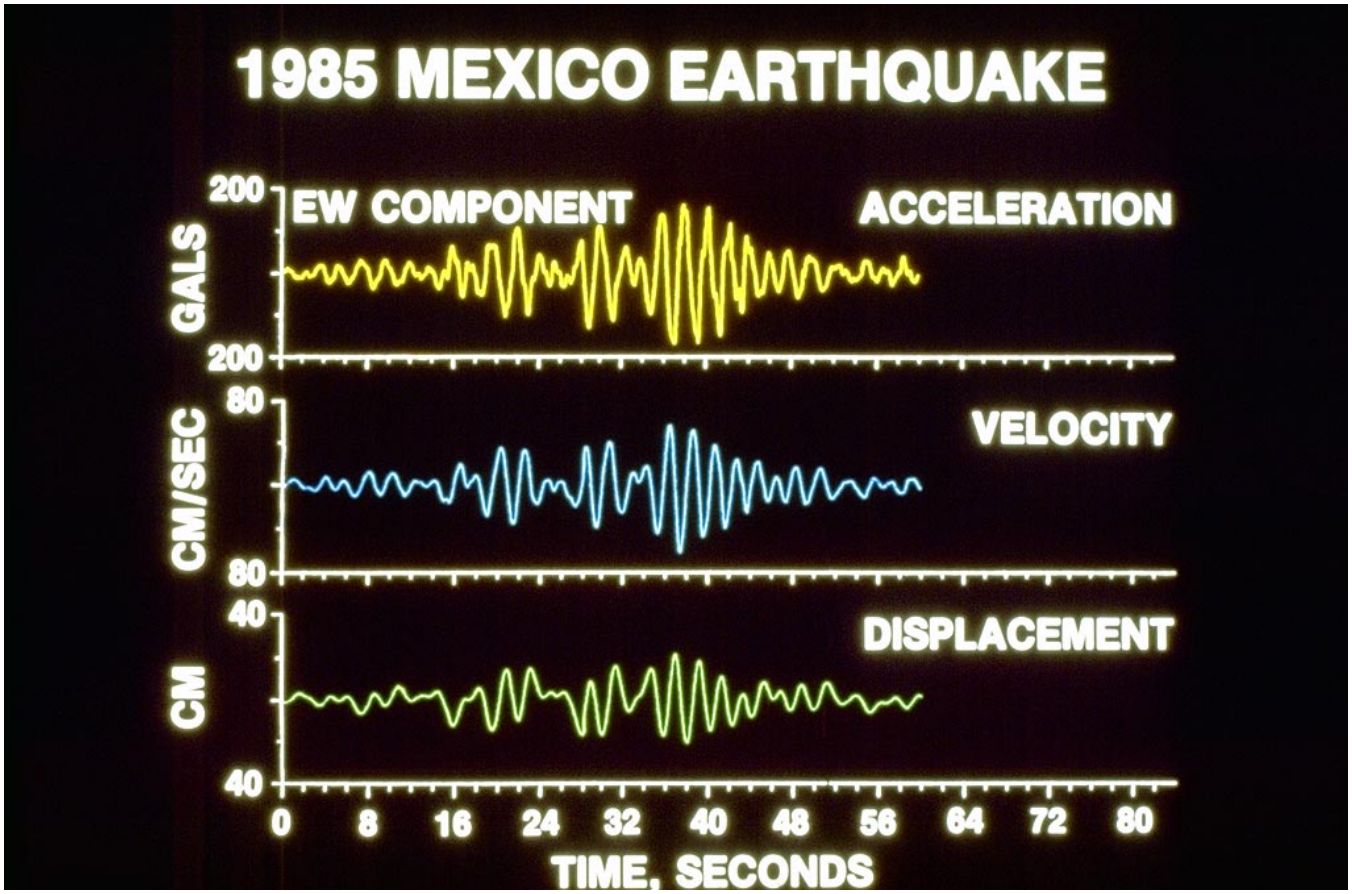
Aerial view looking sothwest of the Communications Center, location of free-field accelerograph station.

Edgar V. Leyendecker

Interior Collapsed Intersection of SCT

Time and Location of Slide: 9/27/85

Closeup of northwest interior corner of the Communications Center where the progressive collapse appears to have been initiated. Heavy damage at this facility virtually cut off external communication between Mexico and other countries.

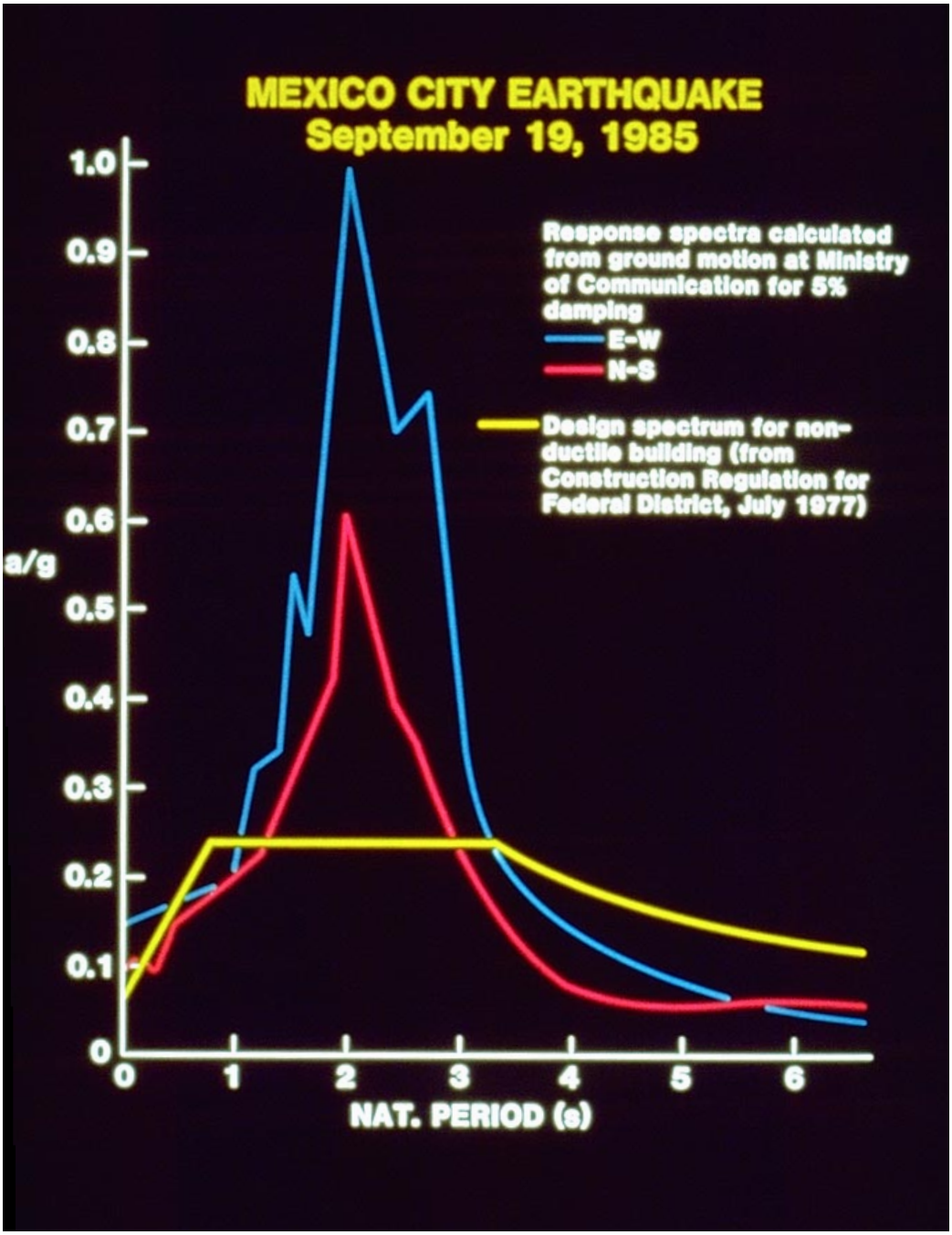


SCT Ground Shaking Records

Prepared 10/85

SCT (communication center) east-west components of acceleration, velocity, and displacement for the Sept. 19, 1985 earthquake.

Artwork prepared by U.S. Geological Survey Data Provided by UNAM



SCT Response Spectra

Prepared 10/85

East-west component response spectra for the SCT site, September 19, 1985 quake.

Artwork prepared by National Bureau of Standards Data provided by UNAM.

William Stone (NBS)

Aerial view of Nuevo Leon Looking Northwest

Time and Location of Slide: 9/26/85

Aerial view looking northwest of the collapsed Nuevo Leon Building. Hundreds died in the collapse.

Felix Yokel (NBS)

Debris Removal at Nuevo Leon

Time and Location of Slide: 9/25/85

Workmen removing debris on the west side of Nuevo Leon. Foundation modifications may have contributed to the failure of the structure.

William Stone (NBS)

Damage in Juarez Apartment

Time and Location of Slide: 9/26/85

Aerial view of two of the buildings in the Juarez apartment complex. Two collapsed structures are visible; the rightmost structure was 13 stories and the one at the left was 8 stories. Only the northern 1/3 of the 13 story building collapsed. The remaining portion was later removed using dynamite.

Edgar V. Leyendecker

Eight Story Structure

Time and Location of Slide: 9/25/85

View looking north of the collapsed 8-story building. The 13-story building is visible in the background. Several other eight-story buildings, partly visible at the left apparently suffered little damage.

Edgar V. Leyendecker

Pino Suarez Towers Looking North

Time and Location of Slide: 9/27/85

View looking north of the Pino Suarez Towers. Originally there were five structures at this site. Three central 21-story buildings and two flanking 14-story buildings. These government office towers were one of the few steel frame structures to collapse during the earthquake (although it should also be noted that the majority of buildings in Mexico City use concrete construction).

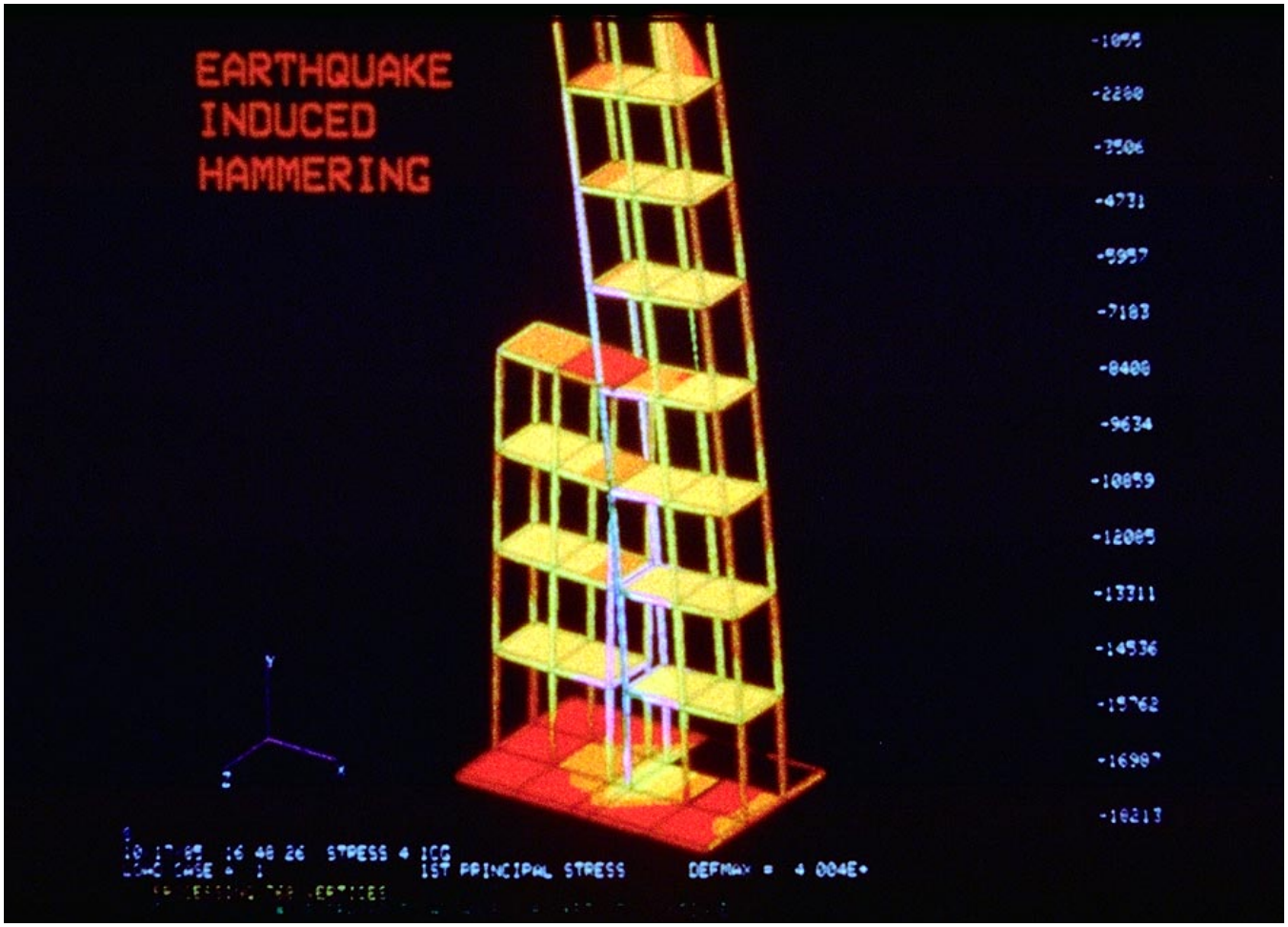
Two 21-story buildings may be seen in the background. A 14-story building north of the 21-story building collapsed on top of an adjacent 14-story building to its south, leading to its collapse.

William Stone (NBS)

Aerial View of Continental Hotel

Time and Location of Slide: 9/26/86

Aerial view of the Continental Hotel, where different sections of the building collapsed when pounding or hammering occurred at nonstructural Joints.



Hammering of Unequal Height Buildings

Prepared 10/85

Building hammering was widespread in Mexico City. This slide depicts collision between two buildings of unequal height.

Computer graphics by National Bureau of Standards

Edgar V. Leyendecker

Hammering of Equal Height Buildings

Time and Location of Slide: 9/27/85

Eight story office building near the Pino Suarez Towers. Failure was induced by hammering with collapse occurring first in the building on the left. The building on the right was near collapse.

William Stone (NBS)

Aerial view of Hospital General

Time and Location of Slide: 9/26/85

Aerial view looking southwest of the Hospital General where two buildings (6 and 8 stories) collapsed.

Edgar V. Leyendecker

Rescue Operations at Hospital General

Time and Location of Slide: 9/25/85

The collapse of a number of buildings at the Hospital General required massive rescue operations. Rescue was slow due to the difficulty in searching through debris and search for survivors.

Edgar V. Leyendecker

Juarez Hospital

Time and Location of Slide: 9/27/85

View looking east of the Hospital Juarez, where several hundred persons were trapped in the maternity ward.

Edgar V. Leyendecker

Severely Damaged Building

Time and Location of Slide: 9/27/85

Most of the 1,000,000 + engineered buildings in Mexico City were undamaged or at least relatively undamaged. There were also buildings that met the intent of most buildings codes for major earthquakes, that heavy damage is permitted but collapse is prevented. The neighboring building in the foreground was not so fortunate.

William Stone (NBS)

Aerial View of Relatively Undamaged Buildings

Time and Location of Slide: 9/26/85

Aerial view of the U.S. Embassy and the Sheraton, a 21-story structure which had only minimal damage and was in use after the earthquake.