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El Al Boeing 747-200 Amsterdam Crash

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Crash Summary

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October 4, 1992, Boeing 747-200F operated by El Al Israel Airlines

6:22 p.m. 6:25 6:26 6:28 6:34 6:35 6:35:53

- Took off from Amsterdam
- Reached 4000 ft
- Warning light for No. 3 engine had came on
- No. 4 engine was out
- Captain reported a control problem
- Captain radioed: “going down, 8162 going down.”
- Crashed into apartment building

Apartment Complex

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Source: http://en.wikipedia.org/wiki/El_Al_Flight_1862

747 Wreckage Piece

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Source: *When Technology Fails* by Neil Schlager, pg. 106

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Ethical Problem

- Too little: FAA issued insufficient inspection protocol
- Too late: FAA & Boeing responded to problem too slowly

Inspection

- Plane had been inspected as per regulation
- Crash occurred roughly four months after its last inspection
- Crash occurred less than a year after China Airlines crash
- Inspections were clearly not sufficient to prevent loss of property and life

Untimely Response

- Fuse pin corrosion/fatigue issues were a known problem
- FAA did not step in to re-write inspections after China Airlines crash
- Boeing & FAA did not act until disastrous media attention was gained from the tragedy

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Fuse Pin

- Hollow cylinder shape
- Cadmium-plated steel,
- 5.5” long & 2.25” diameter
- Sturdy but fragile enough to break
- Develop corrosions and cracks

Boeing 747 Model

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Source : http://www.aviationexplorer.com/747_facts.htm

Design Problem

- Fuse pins failed on right inboard (No. 3 engine)
- Right outboard (No. 4 engine) was knocked out
- Encountered problems with flaps
- Lost control and slammed into ten-story apartment complex

Solution

- FAA & Boeing called for re-inspection of over 900 jets
- FAA required more frequent inspection of "old-style" pins
- In the first three hundred planes, found 499 corroded pins and 14 cracked pins (giving a defect rate of one out of five)
- Boeing continued attempts to design a corrosion-proof fuse pin
- Increase in design tendencies away from fuse pin attachment