



Figure 7.6 - In aviation history, the navigator was a specialized flight crew member, with a panel of navigation instruments and a table where aeronautical charts could be unfolded to graphically solve navigation problems; some airplanes offered a great view down from the navigator's nest, a dome in the belly of the cockpit, to visually measure the drift angle when the visibility allowed (Lockheed L-1049 Constellation - top left, Ilyushin Il-76TD - the rest)

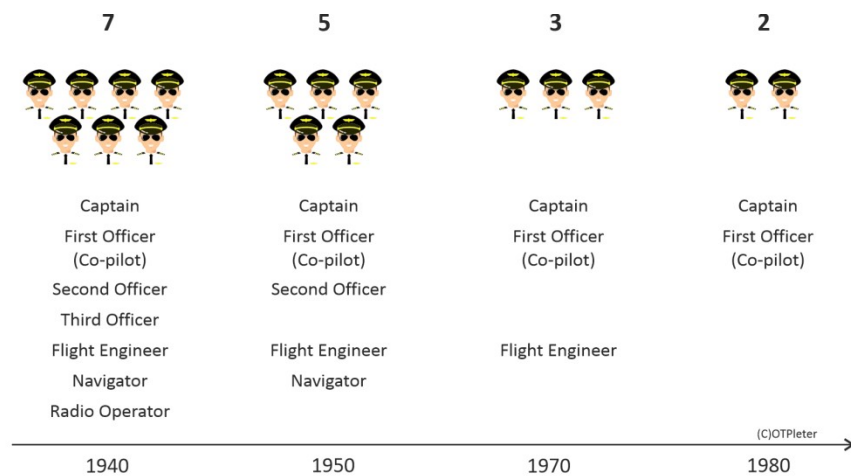


Figure 7.8 - The evolution of flight crew number and positions in the flight deck of a transport airplane is a direct consequence of flight deck automation, which made redundant most of the positions; in 2020, as the flight is automated (with the exception of the take-off phase), there is debate on the necessity of the remaining two crew members; cargo flight operators would like a crew of one, whereas air taxi operators would like fully automated operations

