VR Training for Airline Staff: A Case of KLM Royal Dutch Airlines

Source: Unsplash (2018)

Background

Established in 1919, KLM Royal Dutch Airlines is the flag carrier of the Netherlands, based at Schiphol Airport in Amsterdam (KLM, n.d.). Together with its subsidiary regional airline, KLM Cityhopper, the KLM Group operates a vast network of 92 European cities and 70 intercontinental destinations (KLM, n.d.).

In an effort to add more flexibility to pilot training, KLM introduced VR training for pilots flying the new Embraer 175 and 190 aircraft for its regional airline (KLM, 2020). The VR training program includes three applications. First, the virtual cockpit simulates the point of view from the captain's seat inside the cockpit and allows the pilot to control the aircraft by interacting with the virtual control panel. With the availability of a virtual first officer, pilots can test their knowledge and train procedures anywhere, anytime (KLM, 2020). Secondly, the training program includes a 360-degree instructional video where the pilot can observe takeoff and landing from the perspective of the cockpit jump seat (rear seating) (KLM, 2020). Thirdly, in the virtual walkaround, pilots can explore the aircraft inside and out to practice their pre-flight checks (KLM, 2020). The company believes that pilots will have more time to practice specific situations in the physical simulator if they can rehearse procedures and simple maneuvers, such as starting the engine, at home using VR (KLM, n.d.).

On the other hand, KLM has utilized similar technology to create realistic and immersive fire drill training for its cabin crew. In the event of a fire emergency in a virtual aircraft kitchen, crew members must work in pairs as they navigate the scenario, practice fire extinguishing procedures, and control panicking virtual passengers (KLM, n.d.). With the ability to see and hear the fire through the VR headset, the simulation is able to recreate the tension of a real fire situation onboard (KLM, n.d.). As a result, VR-powered immersive experiences effectively increase staff focus on their training content and enhance training effectiveness. In addition to fire drills, VR simulations for bridge operation and evacuation on water have also been developed (KLM, n.d.).

Apart from training, KLM has also incorporated VR in the reintegration process to help cabin crew prepare for returning to work after a long period of absence (KLM, 2024). The VR experience simulates a full working day, from getting ready at home, to reporting at the crew center, handing in luggage, preparing for takeoff, performing in-flight duties, and arriving at the layover hotel (KLM, 2024). This not only helps staff feel less nervous when they actually return to work, but also helps the company identify where returning staff are having difficulties and provide targeted support and treatment (KLM, 2024).

Challenges

While VR simulations clearly enhance preparation for real-life situations, developing highly realistic simulation software remains costly, despite decreasing hardware prices. Additionally, the reliability of these training programs poses a challenge, as real-life scenarios often involve variables that cannot be accurately replicated in simulations. Moreover, it is worth noting that KLM's VR pilot training has yet to be recognized by the European Union Aviation Safety Agency since its release in 2020, highlighting an important hurdle in its broader acceptance and implementation.

Discussion Questions

1. How does VR training improve flexibility for pilots compared to traditional methods?

2. What are the potential limitations of VR training for pilots?

3. What are the advantages and disadvantages of VR cabin crew training compared to traditional training?

4. What are the main challenges KLM faces in implementing VR training?

5. What future advancements in VR technology could further revolutionize training and operational procedures in the airline industry?

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Keywords