3. CONCLUSIONS

3.1 Findings

1. The flightcrews of both airplanes were properly trained and qualified for the flights except for the self-medication practices of two pilots.

2. The flight attendants aboard USA1493 were properly trained and qualified for the flight; however, contrary to their training, the two flight attendants located in the rear of the airplane began to initiate the emergency evacuation after the initial impact and before the airplane had come to a stop.

3. Both airplanes were properly maintained and equipped for the flights.

4. Air traffic volume and traffic control workload at the Los Angeles International Airport was moderate at the time of the accident.

5. Weather conditions did not contribute to the cause of the accident.

6. The ability of the Los Angeles Air Traffic Control tower personnel to distinguish aircraft on the runways and other airport traffic movement areas, including the accident site, was complicated by some of the terminal II apron lights which produced glare.

7. Operating procedures at the Los Angeles Air Traffic Control tower did not provide redundancy comparable to the FAA's National Operational Position Standards, which require that flight progress strips, used to monitor the progress of flights between controller positions, be processed through the ground control position.

8. FAA evaluations, as administered by the Air Traffic Service staff, did not identify that essential redundancy was absent at the Los Angeles Air Traffic Control tower. This lack of redundancy contributed to and compounded errors by the local controller.

9. The local controller forgot that she had placed SKW5569 into position for takeoff on runway 24 left at the intersection of taxiway 45 because of her preoccupation with another airplane.

10. The local controller's incorrect perception of the traffic situation went undetected because she had an apparent match between her view of the traffic situation on the airport and the flight progress strip at her operating position

11. A flight progress strip for WW5072 was earlier misplaced by the clearance delivery controller. If local procedures had required that strips be processed through the ground control position, misplacement would have been detected and corrected. Because this strip was not present at the local controller's operating position, she misidentified an airplane and issued a landing clearance that led to the runway collision.

12. Current communications procedures for pilots and controllers regarding intersection takeoffs do not require that a specific point of departure be identified.

13. The Technical Appraisal Program for air traffic controllers is not being fully utilized because of a lack of understanding by supervisors and the unavailability of appraisal histories.

14. The local controller did not have the Airport Surface Detection Equipment radar available to assist her; however, under the circumstances and procedures in effect, it probably would not have prevented the accident.

15. Aircraft external lighting systems required for certification are intended primarily for in-flight conspicuity, rather than for conspicuity on airport surfaces; consequently, the external lighting of SKW5569 tended to be indistinguishable from the runway lights when viewed from the cockpit of USA1493.

16. The postmortem presence of phenobarbital in the captain of USA1493 and over-the-counter medications in the first officer of SKW5569 did not contribute to the accident. However, it indicates a less than complete appreciation of the potential dangers that the unauthorized use of such medications may pose.

17. The emergency response of the Los Angeles Department of Airports for this accident was timely and effective.

18. The exit row briefing provided by USAir increased the preparedness of passengers for the evacuation; however, the delay in opening the right overwing exit, the partially blocked exit opening and other reaction to stress caused delays in the egress of some passengers.

19. The propagation of the fire in the cabin of USA1493 was accelerated by the release of oxygen from the flightcrew oxygen system that was damaged in the initial collision sequence on the runway. The accelerated fire significantly reduced the time available for a successful emergency evacuation.

20. Many of the deceased passengers on USA1493 were found near the overwing exit. They did not proceed to another available exit in the rear of the airplane, perhaps because of smoke and limited visibility, and were overcome when the cabin fire intensified.

3.2 Probable Cause

The National Transportation Safety Board determines that the probable cause of the accident was the failure of the Los Angeles Air Traffic Facility Management to implement procedures that provided redundancy comparable to the requirements contained in the National Operational Position Standards and the failure of the FAA Air Traffic Service to provide adequate policy direction and oversight to its air traffic control facility managers. These failures created an environment in the Los Angeles Air Traffic Control tower that ultimately led to the failure of the local controller 2 (LC2) to maintain an awareness of the traffic situation, culminating in the inappropriate clearances and the subsequent collision of the USAir and Skywest aircraft. Contributing to the cause of the accident was the failure of the FAA to provide effective quality assurance of the ATC system.