

Crew Recovery
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Crew Recovery – Real-time, Implementing the solution with a system is a major challenge with all airlines

Delta has implemented a Pilot recovery system. Have not experienced a severe weather problem since implementation.

Continental Airlines	Northwest Airlines
CO realized that you couldn't optimize bad pairings. Pulled out quality of life issues during crew recovery and went to cost decisions until they could get back to decent pairings to optimize. Built cost functions into crew recovery system.	NWA uses cost as main decision tool. Optimizes based on contractual requirements and cost issues.
Used train the trainer for system (Crew Solver) implementation.	NWA has not installed Crew Solver yet. First phase due fall 2001.
Use Crew Solver for medium-high to high irregular ops.	NWA philosophy is that it will be the crew coordinator's major tool. It will be their tool for all irregularities. Operating philosophy is very different from CO. Try to stick to rules set up for financial bottom line.
Parameters set to manage recovery. (Deadhead, layovers, crew members stay together, Pilot vs. FA, time window)	Using reserves are within decision tree. Don't have luxury of not using reserves within contract. Want to use system to look at solution for all levels of irregular operation. Will start to look at options once a delay occurs. Want to be able to tweak parameters.
Alert system – CMS (decision support), schedulers manage	Significant differences between system solutions and man-made solutions. Crew Solver makes better solutions. Proven.
Has Crew Solver changed the way CO does business with Ops decision? Problem is that OPS cancels flights 2 or 3 at a time, not all 16 at same time. Crew Solver allows Ops to take more time to cancel flights because Recovery time is a lot less. Ops can be more proactive and wait to cancel all flights at same time instead of 2's and 3's. This allows Recovery system to make a complete plan for all cancellations, which makes for a better plan.	NWA will pre-set parameters (profiles) that they want system to default to.
Can you track all the decisions you make during the day? Take the schedule as given and solve the schedule. Keep history of what went into the system and decision. System takes reserves as a given.	Concerned about cost mostly. Will use crewmembers that are not impacted initially in their overall solution.
A complete solution has no need for reserves. Try to solve with existing line holders. Try not to impact those who have not been interrupted.	Started developing the project 1 ½ years ago. NWA had the right to build the project without union's approval. Now negotiating new language in contract to better meet needs of both company and union. Discussed need to educate the union that recovery will not re-schedule them to attempt to make them more optimal, just to recover them.
It is possible to use Crew Solver for sick personnel or strikes, but have not used it in this way to date. Mostly used for What-if planning do to a known weather problem occurring at the moment. Typically it is used for re-active irregular Ops.	Reserve staffing level is a minimum of 12%. After bidding they have a lot of open time. Reserves are used to cover open time. That is not what the contract is supposed to do. With Crew Recovery, the goal is to use reserves for irregular operations and less for filling of known open time.
Drive solution to get crewmember back to original plan as soon as possible.	On-going struggle for ownership buy-in from InFlight because Flight Ops funded and is building system. Must deal with FA language components in system.
Vision is to have Ops solutions and Crew solutions automated and have them talk to each other.	Will build decision tree of using FA reserves into system. In some instances, FA's want NWA to use reserves before regular staffing.
Justification – use delay minutes and passenger good will. Come up with an overall solution. Public will see that you	Re-writing entire legality system for robustness, speed and quality with a recovery system in mind. Notification system

know a little bit about what are you doing when you have crews ready to board an aircraft even if the crew that is going to fly the aircraft is late.	– CMS does a sweep every 3 minutes for where crewmember is at that time. Sends ACARS, flight release attachment, e-mail to home or cell phone, or outbound call to phone numbers. Inbound notification is voice response or terminal access.
Did not say they were going to eliminate heads in Crew coordination for justification. It is a decision support tool.	Built 7-digit code to send automated notification to cockpit with ACARS system. The ACARS vendor has agreed to re-write software so pilots have an auto response capability.
Lesson learned. – Thought that the math was a big problem, but found out it was really the data that did not allow manipulation. The data was not clean and is very difficult to get clean. Data ownership issues.	Justification – Used cost of delay and cancellation. Also used improved pattern rescheduling to reduce costs. Eliminates a lot of the clerical function for the coordinator. Will allow coordinator the time to analyze different possible solutions.
If they had it to do over, they would also hire a middle project manager to look at architecture. Someone to put all three pieces together.	Found out from project that the Company system and messaging 'plumbing' did not meet the Company's vision. Used Recovery project to justify a project to upgrade the entire company event-messaging network.
Legality system is interfaced to Crew Recovery.	Rewriting crew legality system is a 22-month project – first phase is 5 months delayed. Problem is that the Legality system is taking longer to re-write than originally expected.
Choose right time to run Recovery system. If you have creeping delays for the next 3 hours, you must make the decision of when to run the system. It may not benefit you to run it to early.	Recovery system has better chance of success if the company has Auto-notification, flexible contract, robust CMS and the ability to re-structure the bottlenecks. (crew coordinators, crew planners)