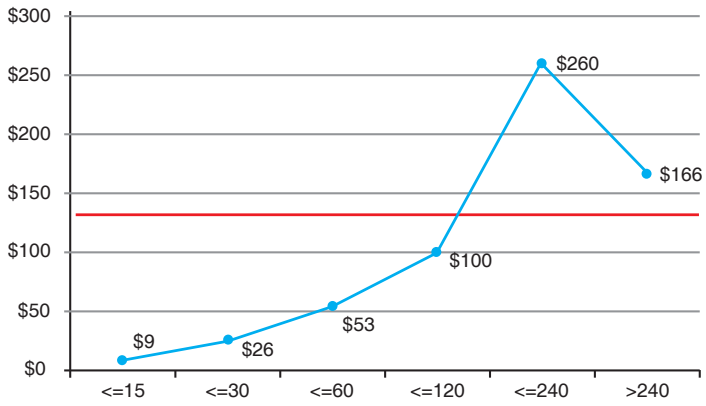
ramco aviation

WHY STRAIGHT THROUGH PROCESS YOUR LINE MAINTENANCE?

Creating efficiencies within Line Maintenance is an industry imperative. With average industry turnaround[1] times reducing from 30 mins to 15,

airline's manage to avoid revenue leakage, through maximum utilization of aircraft. Average Low Cost/Low Fare fleet utilization has increased dramatically from the once 12.5 Hours a day to the current 6[2] and there is focus on arming and gearing up line Maintenance to deal with a constantly changing and increasing flight schedule.



WHY LINE MAINTENANCE?

Average Cycles/day	373	
Cycle Loss/per cycle	$	240
Affect Cycles/day		**2**
Fleet		40
Cost impact/day	$	19,200
Month(28 days)	$	537,600
Year(12)	**$**	**6,451,200**

Martin Consulting Analys is | Loss Cycle Cost Reference Boeing®

An aircraft on ground is a loss making asset. Based on recent analysis done by Airframer Boeing® as part of their AHM[3] support initiative, today the average airline stands to lose as much as $100 US for a 2 hour delay per turnaround leading to a greater cost impact if consequential delays are also factored in. With an average hour cycle ratio of 1.5 flight hours to 1 cycle, a lower average of 14 hours utilization, it's both a rippling impact and risk on 9 cycles. Imagine dealing with 2 flight delays per tail with a fleet of 40 aircraft. That would be a Half a Million U.S Dollars a month, or a staggering $6 Million a year[4].

Whilst most of the 'more-aggressive' airlines outsource their HMV's (High Maintenance Visits), getting the most from the line means that an airline needs to keep the asset flying more onboard better efficiency. The industry has changed over time. Part Pool, Rotable Support and increased use of Line Replacement Units (LRUs) as opposed to HMV inventory are taking precedent with airline contracts changing the fundamentals of how the industry does business. The key driver to this is deploying as much seats as possible and taking on an ever growing competition.

Airlines have tried their very best to innovate at the line. But a lot of these innovations are derived from actual steps to rectify grass root level pain-points that can help leverage a faster flight release.

Airlines today are toeing the line of a 'Pre-notification' from aircraft health monitoring, advanced component reliability monitoring, based on which merge the best of previous cycles and next station actions.

Whilst these work for wheel changes and minor Line maintenance functions such as Turbine Oil Top Up, the industry clearly knows that there really does not exist any firm enterprise wide focus on reviewing the function of Line Maintenance and holistically provide an intervention that can help, every station, every aircraft and every line maintenance engineer (LME)

WHAT DOES THE AIRLINE BUSINESS NEED TO ARM AND ENABLE LINE MAINTENANCE?

Keeping today's challenges in view, enabling Line Maintenance, means that the Line Station needs real-time visibility to "LIVE" Part Base inventory at the flight line, requisition of the part, order the part to the bay, conclude documentation, commence on repair and release the aircraft. Imagine a scenario where all these steps can happen right from a "Smart-Watch" or an app on a cellphone that links up to an entire airline inventory and release process backbone.

Typical line Maintenance Actions | Typical Airframer Fleet SOP Illustration

File Techlog Entry ➜Connect with Stores ➜Requisition for Part ➜ Inventory Release ➜ Form 1 Tag Entry ➜Requisition for Tooling ➜ Requisition Manpower ➜ File Tech Delay

[1] Average LCC and Full Service Gate Turn in Asia and Europe on Regional High Cycle Flights.
[2] Most LCCs from Middle East and Asia have increased hours and cycles on account of improved maintenance practices and reliability.
[3] Boeing Aircraft Health Management | Boeing EDGE After Market and Post Sale Service Offering.
[4] **Martin Consulting Analysis. Day Utlization at 14, hour cycle Ratio at 1.5:1 and a fleet size of 40**

The most viable and workable option at least with ensuring a 360 degree operational improvement is to lower the procedural and responsive steps needed to cut down ground time and release an aircraft faster. Although scenarios differ from airline, station and fleet, there is one common zone that can be simplified and that is the process which starts from the Pilot Report ["PiRep"] till the time an aircraft is released for commercial/revenue flight. Whilst a lot of 'potential' maintenance actions are likely to be determined during the 'walk-around', maintenance 'back & forth's usually commence when work, activity or actions needs to be carried out.

Whilst, a Wheel-Change, Re-racking an LRU or cleaning the windshield are actions that are initiated and then released, complexity and delays mostly occur when the snag or PiRep is significant in nature.

Some of the very basic (Minimum Equipment Lists) MELs/Groundings happen because, of minor glitches that occur especially during fog, rain, high temp or certain cabin defects that can't be differed or MEL'ed. Some of these can at times could be:

1. Emergency Torch in the Galley Not Charging
2. Weather Radar Inop|After Troubleshooting and if there isn't an LRU unit
3. Cabin Pack Light On/In-Operative(InOP)
4. Radar Altimeter Trip
5. ATC Transponder Failure

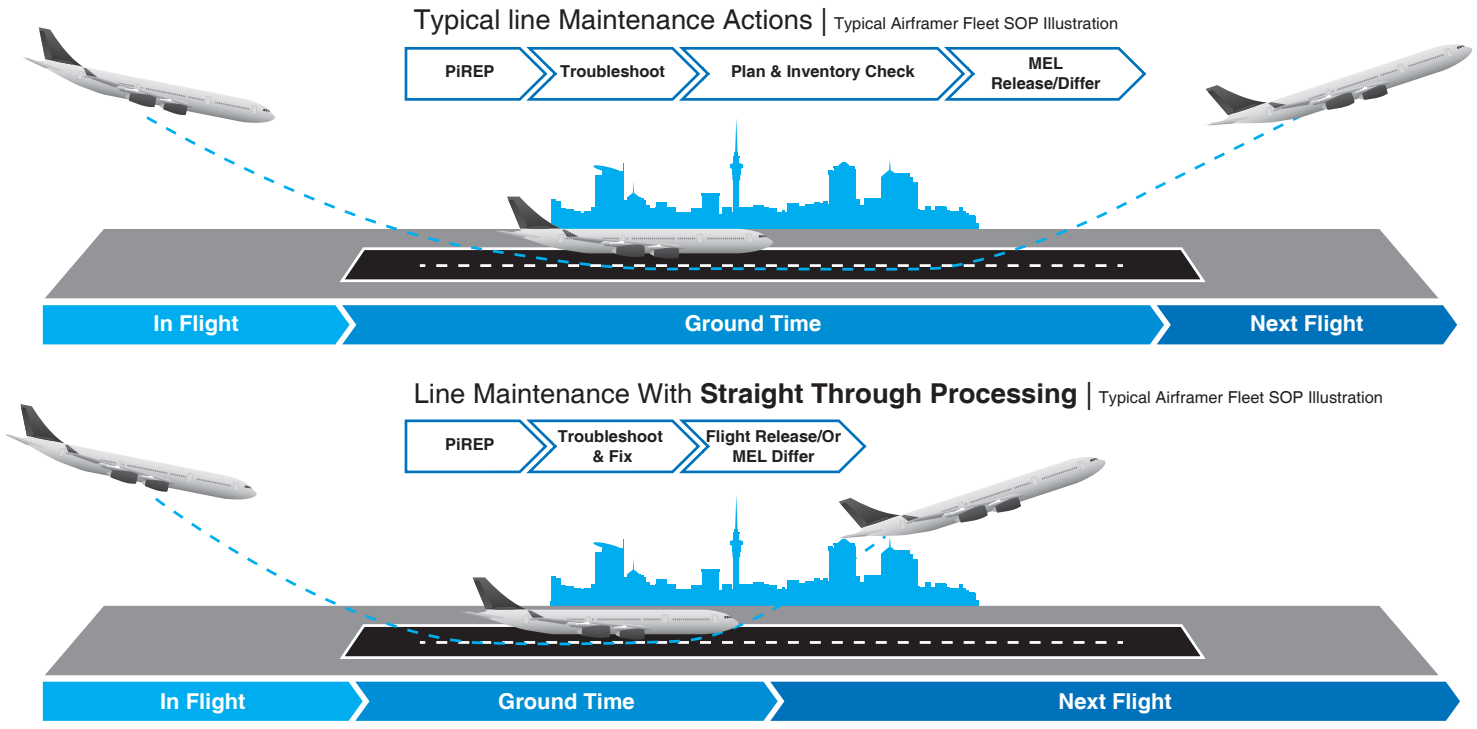
Snags and PiReps listed above can push a conventional gate turn from 30 mins right up to 2 hours and that's being conservative.

WHY 'STRAIGHT THOUGH PROCESS' LINE MAINTENANCE

Airlines make the constant mistake of making Line Maintenance dependent on Engineering, Stores and inventory.

If the LME is lucky, stores Engineering & Inventory can be 30 mins way, and if he isn't, its 2 days away.

It is common to see a part lying at the line station and the procedure to get that part takes a minimum of one hour, with another hour to fix or install that part on the aircraft



Plan & Inventory Check

Straight Through Processing enables a faster flight release and lowers ground time by integrating and eEnabling LineMX with inventory. Even before the Aircraft comes into land, the part's are available **"RIGHT AT THE FLIGHTLINE".**

Powering Line Maintenance means to understand what the Line needs, when they need it and how soon can it get delivered with a powerful and rich digital backbone. This helps automate the process, digitize the operation and give the team more time to get the job done, than deal with laborious procedures as “Phone-Calls”, “Emails” and “Constant MainTrol Back and forth”.

Leveraging Next-Gen IT enables an efficient Inventory, Planning, Stores and Procurement. MROs in turn gain the ability to turnaround an aircraft in record breaking delivery time and release the aircraft back in Flight.

Straight Through Processing works like how airline wants it to work and is equally accountable for the airline to generate profits as much as Efficiency and Reliability.

Straight through processing works with a simple logic of automation, cutting down steps whilst retaining the core requirement from Line Maintenance - Documentation, Action, Form 1 Tagging, Compliance, Safety and Actual Maintenance Action.

Straight through processing has the ability to not just eliminate turnaround delays but also enable Line Maintenance to take a maintenance action, with filing all compliance and process requirements including getting the part, installing the LRU and Releasing the aircraft well within the mandated/acceptable turnaround time defined.

That means a typical GateTurn becomes:

Aircraft Arrives ➜Snag Recorded ➜ Part Installed ➜ Flight Released.

And does away with the:

Contact MainTrol ➜Search Part ➜Confirm Part ➜Release Part ➜Commence Documentation ➜ Install Part ➜Release Flight

Content advice and Data contributed by Martin Consulting Group
Martin Consulting focuses on understanding the airline’s fleet and bases its recommendation keeping financial objectives, operational capability, fleet performance limitations and flight safety in view.

AVIATION PARTNERSHIP PHILLIPPINES TRUSTS RAMCO

AVIATION PARTNERSHIP

APlus, SIA Engineering’s line maintenance subsidiary on-boards Ramco Aviation Software