The Case for Compliance Monitoring in Maintenance Organisations

or

Process and Practice Monitoring

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Compliance Monitoring

Human Error in aircraft engineering is one of the most significant problems facing engineering management and the authorities today.

The trend of accidents or incidents caused by maintenance error is moving up, as are the pressures on maintainers to do more with less for less.

At the same time the resources and experience levels are decreasing.

Compliance Monitoring

At the 14th Maintenance Human Factors Conference in Vancouver March 2000, the NTSB announced that unlike the reported level of maintenance related accidents, at about 12% of the total, the actual experience in the USA was:

"in the last 5 years FAR121 operators had suffered 14 hull losses,

7 of which are attributable to maintenance or engineering failures".

That is 50% of the total.

Compliance Monitoring

The problem is not poor engineers, but related to the working systems and the maintenance culture.

Generally Engineers are :

- **Achievers with a “can do” attitude**
- **Trained as trouble shooters and problem solvers which is a dichotomy with the work ethic.**
- **Not team players (albeit they work in teams)**
- **Have a macho sub culture.**
- **Committed to safety, but accept risks as part of the job.**
- **Rewarded for getting the job done, not how they achieved it.**

Compliance Monitoring

Management treat Human Error as something abhorrent, whereas it is a norm of being a human being.
It is the ability of our systems to deal with the effects of that error that is the issue.

We must ensure that when errors happen we are prepared for it and have systems that are robust enough to sustain safe operations.

Compliance Monitoring

For many reasons maintenance engineers are error prone as are their systems of working.

Yet we assume once qualified engineers need no further testing, or indeed as far as possible no further training. Nor in the completion of their work are they monitored.

The MRM training given does not result in building team-working or addressing the macho culture.

This does not accord with the ethic found in flight operations where training, testing and workplace monitoring are all norms, but why?

Compliance Monitoring

The safety nets under which work is achieved are constantly being eroded through commercial pressures.

In fact there are 3 myths in maintenance engineering which management and regulators regularly state:

- **All work is done in accordance with the procedures**
- **All work is supervised, and**
- **Responsibility for the quality of the work is vested in the individual**

In fact all of these are only minimally applied.

Compliance Monitoring

Procedures

Do procedures solve the problem?

No, there are to many sources and not enough time to use them.

We must have procedures but they need to be smarter and readily usable.

New ways of working is an option.

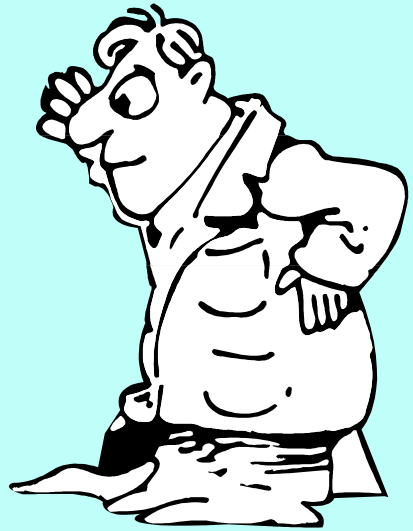
Compliance Monitoring

Supervision.

Does supervision address how the work is being done, or is it limited to paperwork management?

There is little will in the industry to commit resources to real supervision and no definition of what is required.

Supervisors should know their staff and what they do to complete their tasks.



Compliance Monitoring

Quality

What about Quality and what is QA's role?

Engineers do not set out to err and it is difficult to assure you own work, and indeed they do little to assure the quality beyond doing the task to the best of their ability and signing for it.

Quality Assurance needs to spend time in compliance auditing, meaning how the job is being achieved, but they are the internal regulator and are not enough.

Compliance Monitoring

What is being done? :

- **Human Factors training for maintainers is a requirement and HF is part of the licensing process.**
- **User-friendly task cards/worksheets are being/ have been developed in some companies**
- **Shop floor non conformance feedback is being encouraged in some companies**
- **Compliance Auditing has been made a requirement through JAR-145.65b**
- **The CAA are introducing a Structured error investigation programme (Maintenance Error Management) to aid in learning from errors.**

Compliance Monitoring

Is that enough?

- **We believe not, indeed as a line responsibility, Supervisors or Standards Engineers should be routinely monitoring maintenance practices.**
- **Procedures should be reviewed for achievability or practicality as part of this monitoring activity.**
- **Staff feedback on potential or real problems should be sought.**
- **Open reporting be actively encouraged.**

Compliance Monitoring

What we are proposing is nothing else but a Pilots Route/Line Check

Adapted to suit engineering and embedded into the HF training package and the management's leadership in th development of the corporate Safety Culture.

Monitoring working practices can be achieved, but will require a change in culture and needs commitment from top management.

Compliance Monitoring

The Management of a Company are accountable for ensuring that:

“WHAT THEY SAY THEY DO”,

“THEY & THEIR STAFF ACTUALLY DO”