Potential Approaches to the introduction of a CRM program in a small airline setting.

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Abstract.

CRM programs are becoming an increasingly accepted part of commercial aviation. Several regulatory authorities are moving towards establishing compulsory CRM requirements for carriers. This paper looks at the potential options to meeting an undetermined regulatory requirement for a CRM program in a small (<50 pilots) airline in contrast to the well known model utilized by Delta Airlines in the late 1980's across its >1700 pilots.

Management implications of the Delta Approach in a small airline.

The CRM training program introduced at Delta Airlines in the late 1980's (Byrnes and Black, 1993) would pose many management issues in a small regional airline. The general approach of research and evaluation, development, implementation, and analysis will hold true for any successful CRM exercise (Flin et al, 1998) however the stated difference of scale (1700 Delta pilots verses <50 Regional pilots) will by necessity change both the circumstances in which the training will occur as well as the resources available to develop and conduct it.

It is highly unlikely that a small airline would have the diverse internal 'legacy' cultures Byrnes and Black (1993) isolated at Delta. An analysis would still have to be carried out as even if there had been no mergers / acquisitions in the past there may be differing internal cultures based on factors such as military service, national or regional origin, gender, age etc (Johnston, 1993) that may be deemed to produce crew behavior incompatible with the goals of the airline. In such as small airline it would be unlikely that there would be a large training department and it is more

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likely that there would be a handful at most of line-check pilots who also conduct initiation training.

Simulator training may also be conducted by this group or outsourced (Butler, 1993). As such this would provide a limited internal pool of staff suitable to develop and conduct CRM training which would make it more likely that external consultants would need to be used in a more active role than at Delta, which would of course have certain cost implications.

Once the training needs had been evaluated and the program developed the issue of the training sessions themselves would come into play (Flin et al, 2002). A small airline would not have the ability to send large groups of pilots to training together because of the effect on operations of a reduction of staff numbers at that level. There would also be an issue with allocating a staff member to conducting training and the effect that their absence from regular duties would have.

Another management issue would be the relevance of certain aspects of CRM training (or indeed the training itself) in an environment where all pilots were likely to have worked together in the past regardless of the method of allocation (due to the small number of pilot combinations in a small airline, especially if it operates a mixed type fleet further reducing the number of combinations). In this environment there would already have been a building of team dynamics in place (Callan et al, 1991) and except for extreme cases of inappropriate behavior (overly authoritarian captains etc) the need to consciously build common communications models would be reduced as there would be a tendency towards common behavior within the group over time due to the high level of repeat contact that would be experienced (Myers, 1989).

The final implication for management would be post-CRM assessment which again would require resources in terms of staff time and money that are less likely to be available in this form of environment (Gregorich & Wilhelm, 1993).

Some Alternative Approaches to the Delta Model of CRM implementation.

Some of the other alternatives available to the Delta model for a small airline would be:

a) Send pilots to an external CRM training program run by a major airline.
b) Develop a CRM program as part of a consortium of smaller airlines.
c) Purchase an 'off the shelf' CRM solution and present in house.
d) Conduct a minimal CRM training session based on the regulatory requirements mandated.
e) Employ external consultants to develop and present the CRM training program
f) Utilize line check pilots and other airline staff to present an externally developed program.
g) Utilize in-house staff for all aspects of the program.

As can be seen there are many available options, which will be evaluated individually at each of the three stages (development, implementation and evaluation)

Evaluation of options a) thru g) – Development stage

The development stage includes several sub-stages – problem recognition, research, and development. Each of the options a) thru g) vary noticeably in approach and resource requirements.

The development stage in option a) is virtually non-existent. Problem recognition is likely to be minimal and at the level of 'we need to have this training for compliance'. It would be possible to collect some basic attitude information and self-diagnostics through simple survey instruments

etc (Foushee & Helmreich, 1988) at relatively little resource cost. Development of the program would largely be carrier out by the host airline and would most likely include limited option for customization based on any problem recognition and/or research conducted by the regional airline. Clearly this 'minimal approach' would result in relatively low development stage costs (both in cash and man-hours).

In contrast to option a) option b) would require considerable more effort in the development stage. The consortium of airlines would each need to conduct problem recognition and research internally (although cross-utilization of staff from different airlines may provide a noticeable benefit in providing a fresh outsiders view of internal operations (Myers, 1989)). Once the problem recognition and research sub-stages have been completed the consortium members would need to share their findings and the needs of each airline and then develop the CRM program to meet all these needs. Development costs would be reasonably high for this approach in terms of cash and man-hours used. There is also the additional cost that would result from the sharing of internal information with other carriers making it likely that only non-competing carriers would be able to cooperate. For instance in Australia Regional Express, Skywest, Alliance Air and Aeropelican could all cooperate effectively as they all have a shared history (all former Ansett subsidiaries), are non-competitive (no overlapping route structures), and are geographically separate (making the fear of 'poaching of top pilots' less likely) while in North America or Europe such instances of non-overlapping airlines would be far less likely (Personal knowledge).

Option c) like option a) have very low development costs. The purchase of an 'off the shelf' solution would mitigate most development costs although it would be hoped that the problem recognition and research sub-stages would still be carried out and that some attempt to either

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purchase a CRM solution aimed at similar needs (from an airline with similar identified problems for instance) or would spend some resources on customization of the package to address the specific needs of the organization (Gregorich et al, 1990).

Option d) is perhaps the lowest cost option in terms of development cost. The regulatory requirements would essentially take the place of problem recognition and research and would form a substantial part of the development phase.

Option e) by contrast would bring in consultants to conduct all stages of the CRM program. This would be the most efficient in terms of man-hours, as it would not require the use of any airline staff. It is also likely that the development stage would be relatively quick as the consultants would be far more experienced in this than airline personnel. Financially this would likely be the most expensive option for development (Taggart, 1993).

Option f) is functionally identical to option e) in the development phase (these two options differ only in the implementation phase).

Finally option g) matches the delta model by utilizing in-house staff to conduct all aspects of the CRM training (Byrnes & Black, 1993). As the airline in question is considerably smaller there would be necessary modification in the size of the steering committee and development groups and it would be likely these roles would be filled by one or two individuals. Cost for this option would be the highest in terms of man-hours but would cost less than option f) and possibly some of the other external options in cash terms.

Evaluation of options a) thru g) – implementation stage.

Variation in approach between options a) thru g) continues in the implementation stage.

For option a) implementation is limited to logistics of staff movements to training sessions and LOFT at the host airline site. This is not an insignificant issue but is common across all approaches and in any training exercise (Flin et al, 1998, Foushee & Helmreich, 1988).

The consortium approach of option b) is perhaps the most problematic. Each of the consortium airlines would need to decide on staff allocation and there would need to be a decision regarding the mix of pilots from the different airlines and if there would be a need for certain sessions to be carrier specific etc. In the Australian example (Rex, Skywest, Alliance and Aeropelican) there would be issues of geographic separation (Skywest in Western Australia, Alliance predominantly in Queensland, Aeropelican in NSW and Rex mainly in NSW and Victoria) to contend with. In addition, the LOFT sessions may need to be split and conducted on an airline specific basis due to differing aircraft types (e.g. Rex operates Saab340 and Metro23, Skywest operates Fokker 50 & 100, Aeropelican DHC-6, and Alliance Fokker 100's) and consideration regarding timing and suitability of scenarios to each aircraft type and airline operation would need to be made.

Options c), d), f), and g) would all be similar in this phase. The training sessions would be presented by airline personnel (who depending on background may need to be trained to be trainers) to their colleagues (Byrnes & Black, 1993, Kanki & Palmer, 1993). The airline would need to organize appropriate training space, LOFT facilities, and organize scheduling issues to provide a suitable group size for training within the restrictions of operational needs.

Option e) varies from c), d), f) and g) in having the training presented by external consultants. This would be less costly in man-hours as it would not utilize airline staff in conducting training but would likely be more financially expensive. Many of the writers on CRM (Byrnes & Black, 1993, Flin et al 1998, Gregorich & Wilhelm 1993) have also warned against this approach due to the likelihood that pilots will be less accepting of training conducted by outsiders and that there is the real risk that consultants may not understand responses or may communicate in a less than optimal fashion due to lack of familiarity with the operating environment of the airline (even if they are experienced pilots in another setting) (Byrnes & Black, 1993).

Each of these approaches will also need to deal with the issue of inclusion of LOFT training. Almost all CRM writers have expressed great support for LOFT as a training and reinforcement aid (Butler, 1993). The amount and type of LOFT training included would depend on the resources of the airline and its access to LOFT training. Some small airlines may have no LOFT access while for others the cost of access would restrict usage.

Evaluation of options a) thru g) – evaluation stage.

The approach to evaluation is likely to be less varied than in other phases as there are limited sources of evaluative information available and the utilization of these will likely be financially determined.

Of the options presented a) and e) utilize external groups to provide training and it would be likely that this would include some degree of post training evaluation in the short term. Ongoing evaluative training conducted in-house would be likely to be conducted to some extent as well depending on the level of support from management (Gregorich & Wilhelm, 1993).

The minimal compliance approach of option d) would make it likely that evaluation would be limited to those factors mandated by the regulatory requirements with little further being conducted.

All other approaches would allow for variable degrees of evaluation including some or all of attitude surveys, NOTECHS style line checks, automated systems for monitoring any instance where flight parameters are exceeded (Kreichbaum, 2003), self reporting, and accident and near-miss statistics (Flin et al, 2002).

CRM as a continuing program

Most of the writers on CRM promote the view that CRM should not be viewed as a one-off training (and in fact that such approaches can be detrimental in the long run) but should rather be seen as a continuing process. In this regard as in the other aspects of the choice of approach, the specific details of the airline in question will dictate the best approach. Clearly any approach beyond option d) (minimal compliance) would involve ongoing NOTECHS style assessment by line check pilots in any airline in which they were available and would include a CRM induction for new pilots on recruitment (Flin et al, 2002).

Conclusion - Determining the overall best-fit solution

Ultimately the choice of approach to CRM implementation in a small airline, which has been required by the regulatory environment to implement it, will be largely determined by the specific circumstances of the airline itself and the nature of the regulatory requirement. The

initial problem identification and research sub-stages would provide a large part of the information necessary to determine (along with an understanding of the resources available and the external environment) which approach or combination of approaches would be most appropriate. To return to the Australian regional aviation example it is highly likely that the CRM needs of Regional Express (Rex) – an airline formed from the merger of Kendall and Hazelton after the collapse of Ansett that operates two turbo prop aircraft types across a 4 state route network – would differ considerably from the needs of Alliance Air – which was formed the failed FlightWest Airlines and operates a single jet type (Fokker 100) on a route network in 2 states – and that both of these would differ starkly from the needs of Aeropelican – which operates 4 DHC-6 turboprops on a single route (Newcastle/Belmont to Sydney/Kingsford Smith). As Byrnes and Black (1993) detailed in the Delta approach, the success of a CRM program is determined by its ability to address the specific needs of the airline.

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