THE EVOLUTION OF COMPETENCY: FROM INDIVIDUAL EXPERTISE TO GROUP COMPETENCY

Competency may be seen as something to do with individuals, but we work in a social context, belonging often to several groups. Group can resist new ideas, but given the right environment, individual expertise can also spread. **Ludovic Mieusset** and **Sébastien Follet** discuss how individual expertise can be transformed into new group competencies.

KEY POINTS

- **Controllers and other front line specialists have common competencies and individual expertise.**
- **Good practice procedures may meet resistance among operational peers.**
- **By developing freedom of speech, some groups allow each member to share his or her past experience for the benefit of the group.**
- **The informal leader of a group, and the connectors that help to connect groups, have special roles in expanding the boundary of the expertise, and spreading good practice.**
- **In the right environment, individual expertise can be transformed into new group competency.**

A twin-engine airplane encountered a technical problem on one engine on initial climb.

The crew declared a PAN-PAN.

The first controller acknowledged and immediately asked the nature of the problem: the fuel endurance, the intentions of the crew, the number of people on board, the need for emergency services deployment on landing… In the cockpit, the crew started to go through the emergency checklist. But the controller repeatedly interrupted the task. This was uncomfortable for the crew, but the controller was following his own checklist, which he had been trained for when facing unusual situations.

The second controller had the same competencies, learned and rated all along her initial and continuous training. But she had already faced this type of situation. In this particular case, she knew that the standard procedures were not the best choice. So, after acknowledging the PAN-PAN message, she decided to apply another tool a colleague had shown her: the ASSIST procedure.

This procedure, implemented in more and more ANSPs across Europe, gives ATCOs important information they will relay to emergency services for a safe recovery. In that particular case, the controller will try not to interfere too often with the crew; only at specific moments. Her past experience had given her a certain level of expertise in dealing with PAN-PAN situations. This locally non-standard procedure might be considered effective by her colleagues. But, despite this recognition, there was a real reluctance to change the procedures, and transform this expertise into a new shared competence.

The third controller had the same high level of competency as the other two. But he was more independent. An open-minded individual, he explored widely all areas linked to aviation activity. In particular, he tried to exchange as often as he could with pilots, firefighters, ground handling staff, and others. Once, a pilot told him about the NITS procedure, a procedure implemented by airlines with multi-national crews. On several occasions, he experimented with this tool, and had the opportunity to evaluate its benefits after debriefing with the crew involved in the incident. He developed a certain level of expertise, and could be considered an expert, meeting both ATC and pilot needs effectively. But he was on the edge of the two groups and so might also be considered an outsider to each group. In this situation, the controller's action was not considered legitimate by his fellow workers.

This could have been the story of 'the three little pigs', and the incident might have been the wolf. In fact, it is not. None of the three controllers is lazy or inconsistent. All of them are highly competent and did the job correctly to ensure a safe return of the plane. But regarding their expertise, they each deal with it in a different way.

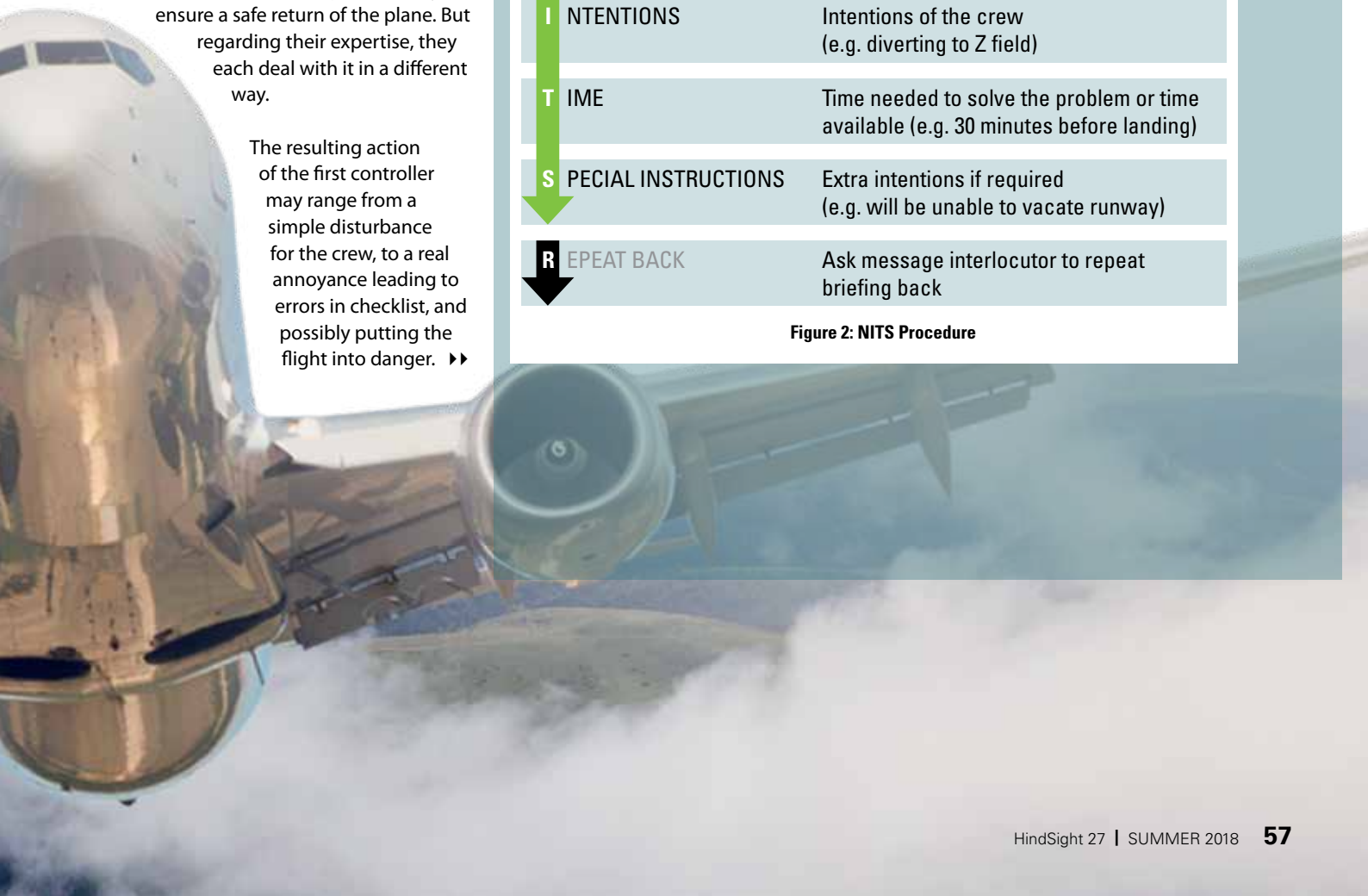
The resulting action of the first controller may range from a simple disturbance for the crew, to a real annoyance leading to errors in checklist, and possibly putting the flight into danger. ▸▸

EMERGENCY	
A CKNOWLEDGE	Make sure you understood the nature of emergency and acknowledge accordingly
S EPARATE	Don't forget to establish/maintain separation!
S ILENCE	Impose silence on your control frequency if necessary. Don't disturb urgent cockpit actions by unnecessary transmissions!
I NFORM	Inform your supervisor and other sectors/units concerned
S UPPORT	Give maximum support to pilot and crew
T IME	Allow pilots sufficient time to work on their problem

Figure 1: ASSIST Procedure

EMERGENCY	
N ATURE OF THE PROBLEM	Give a quick overview of the situation (e.g. slat problems)
I NTENTIONS	Intentions of the crew (e.g. diverting to Z field)
T IME	Time needed to solve the problem or time available (e.g. 30 minutes before landing)
S PECIAL INSTRUCTIONS	Extra intentions if required (e.g. will be unable to vacate runway)
R EPEAT BACK	Ask message interlocutor to repeat briefing back

Figure 2: NITS Procedure



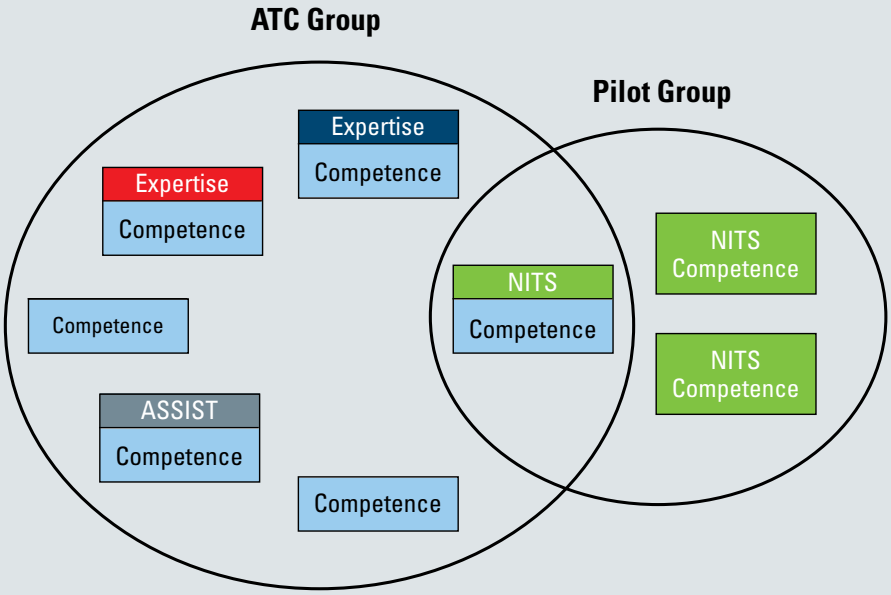


Figure 3: Emergency procedure: Group competence and individual expertise

The ATC-oriented procedure implemented by the second controller gives headlines, but she has to ask for information, without clearly knowing when to ask. With the NITS procedure, the third controller waits for the pilots to give him the needed information. ASSIST and NITS seems to bring progress, so why aren't they implemented as new competences?

These three controllers could be found in any team or group. Each one shares common and standard competencies, but has also developed his or her own expertise, based on personal experience. Does the sum of individual expertise develop the group's expertise?

This example, inspired by a real-life situation, shows that within the same group of controllers, an aircraft technical problem may be dealt very differently; more or less efficiently. To be part of the group, we have to respect the rules of the group, but we also have to show that we are competent. In order to fulfill some of our human needs such as group integration, group recognition, and a sense of belonging, we are very keen to show our individual skills and abilities when facing an unusual situation. This is certainly one of many reasons why it is so difficult to waive our own expertise in favour of another's. We'll question our practice only if the group decides to give credit to specific expertise. In this situation, we'll conform to the new practices out of allegiance to the group.

This conformity comes naturally. The group, giving credit to the experience of one of its members, transforms this individual expertise into new competencies, which will become a new standard for the group.

How can a group transform individual expertise into new competence?

First of all, the group needs to be able to identify the group boundaries and other related groups. We are all part of various overlapping groups, from small to very large. Each group has its own rules. Belonging means understanding and accepting and respecting these rules. Working as an ATCO means we apply European good practice and rules as members of EUROCONTROL and EASA, national rules as member of our ANSP group and national regulator, local rules as members of our control unit group, and team rules as a member of our work-group. But we're also part of transversal group, such as our special workshop group.

Let's concentrate on an ATC team. In some groups, competencies never evolve, and pilots confront a different practice according to the controller on duty. On the ATC side, it's very comfortable, but may fail to adapt to a constant changing world. From the cockpit, the situation may look a little bit muddled, and the crew does not really know what to expect.

Other groups are able to identify the competencies of each member of the

group. By developing freedom of speech, they allow each member to share his or her past experience. This expertise is recognised, and the group is able to refer to the most appropriate expertise. This implies some special principles.

Some groups naturally fulfill all these characteristics. This is partly thanks to an informal leader – a member of the group, chosen by the group, and who defends the group. He or she is central in the group communication, sharing information and knowledge inside the group. The leader upholds the group rules and is also emotionally intelligent, aware of human factors aspects for individuals and for groups. Unfortunately, there is confusion between leader and chief – a chief may have his or her own preference for solutions, and often decides regarding the chief's own constraints, discouraging others' opinions.

"Even with a very efficient group, it's difficult to transform expertise into new competencies. The main problem lies in the resistance to change."

But even with a very efficient group, it's difficult to transform expertise into new competencies. The main problem lies in the resistance to change. Individually and collectively, we are reluctant to change. The group's need to defend its common practices and provides some stability. We all know of situations where changes have led to group conflict or separation. Changing means abandoning well-established practices, and adopting new practices, and learning to apply them correctly. It is an effort, and the effort remains each time we have to apply them, until they become automatic.

The same influence is at work for the third controller in our earlier example. This expert is an outsider and by his connection to both sides and might be seen as a danger to the group. Which language does he or she speak: pilot or controller language? Being at the junction of two groups might signify belonging to none of them. And that is an enormous loss, because the expertise of the third controller is built on two different groups. This person is a link, a connector (see HindSight 25 and HindSight 26). The connector knows the rules of the two groups, and can bring expertise to the two groups. Special attention should be given to this particular member and role.

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Transforming expertise into new competencies might be an odd idea, but this is a way to implement Safety-II, as described by Professor Erik Hollnagel (see HindSight 25). Everyday work – good and bad experiences – give every controller some expertise. Learning from individual expertise to gain some new and more efficient competencies, is a way to progress everyday safety. This progress relies on us. The key is to develop collective intelligence into our groups of all sizes following the sorts of principles outlined above.

Principles for freedom of speech

- Limit hierarchy effects to reduce fear of the consequences of speaking up.
- Limit extreme differences in expertise level, to avoid the fear of comparison.
- Give confidence to the members of the group by team-building or team training activities, in order to create some shared experience, to better know each other, and to develop interpersonal relationships.
- Don't relay on individual members who are more willing to speak up 'for the group'.
- Set some rules or guidelines on how the group works. These might include the absence of judgment and the duty to listen to everyone, even a solitary and discordant voice.

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