

SNAPSHOT



Snapshot: A safety climate survey

Cooper, R., McMahon, S., & Fogarty, G. J.



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The current paper provides a list of scales and items referred to in: Fogarty, G. J., Cooper, R., & McMahon, S. (2018). A demands-resources view of safety climate in military aviation [Aviation Psychology and Applied Human Factors, in press]. As mentioned in Fogarty et al., Snapshot is based on the Job Demands-Resources (JD-R) model, and has undergone minor variations in the items and scales across the three years of implementation. For the purposes of the validation paper, results focused on the items and scales that were common across all three years and presented to all respondents. However, additional scales that were not analysed in the Fogarty et al. study (because they were not common to earlier administrations) are shown in Section 7.

Snapshot is administered annually by the Directorate of Defence Aviation and Air Force Safety (DDAAFS) to personnel within the Royal Australian Air Force and selected Army and Navy aviation-related elements. Snapshot was first introduced in 2013 in an effort to strengthen the organisations surveillance of safety culture. It has been designed to support managers (referred to as Commanders within a military context) in the management and enhancement of safety climate, as well as capturing a wealth of information on unit performance. Safety climate and the overall health of an organisation are tightly interwoven. In recognition of this interdependence, Snapshot seeks to provide managers with a holistic picture of their work group by breaking down the pathways and components that contribute to a wide range of organisational outcomes. Additional background information on the administration of Snapshot can be found in Cooper and Fogarty (2015).

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Section 1 - Background information

The required background information will vary from survey to survey. This section should be purpose-built to suit the context in which the survey is to be administered.

Section 2 – Job Demands

When the Job Demands section of *Snapshot* was created in 2014, it was not the intention to form subscales because items of this type (i.e., stressor items) are often treated as indexes rather than scales. In our reporting, we chose to focus on a total score initially and thereafter on problem areas identified by individual items. However, we are aware that groups of items share variance and reliable subscales can be formed.

In the 2016 survey, there were 18 items in the JD section and a single item on bullying. Table 1 contains the 18 items.

Table 1. Job Demands Items

Instructions: *This section explores the demands you may encounter at work. Please indicate how often you encounter these demands. Make your rating based on how things are at present.*

Response Options: *Never, Rarely, Sometimes, Frequently, Most of the time*

Reliability α : .92

Items:

JD_1: We have trouble keeping up with our workload

JD_2: We do not have enough time to carry out our tasks properly

JD_3: We do not have the equipment that we need to do our job properly

JD_4: We do not have sufficient manning to achieve allocated tasks on time

JD_5: We are micromanaged

JD_6: We are not given enough notice of variations to schedules/duty rosters

JD_7: We are concerned about loss of skills because of the lack of opportunity to practise

JD_8: We spend more time on paperwork than on our real jobs

JD_9: Underperformance is not dealt with effectively

JD_10: Unimportant tasks or activities interfere with our real jobs

JD_11: We have to work overtime to get our work done

JD_12: We feel pressure because of the critical nature of our work

JD_13: We have to cover for underperforming colleagues

JD_14: Work requirements (eg absences or extended hours) put pressure on our personal lives

JD_15: Inexperienced staff are promoted/appointed too quickly into supervisory/management roles

JD_16: We are required to rush tasks to meet job requirements

JD_17: There is pressure from management to maintain performance standards at the cost of safety

JD_18: We cannot work safely and keep up with our work schedule

Bullying: In the past three (3) months, how often have you been subjected to workplace bullying in your unit/workplace? *

* The bullying item, which was presented separately, used the same response format but had its own introductory text: *Workplace bullying is a persistent, unreasonable form of harassment. It can be defined as unwanted or unwelcome behaviour that a reasonable person, having regard to all the circumstances, would consider offensive, insulting, humiliating or intimidating. Workplace bullying does not include reasonable management action taken in a reasonable way.*

Section 3 – Job Resources

Table 2. Job Resources Items

Instructions: *This section explores the support you receive in your work environment. Please indicate your level of agreement with each statement. Make your rating based on how things are at present.*

Response Options: *Strongly disagree, Disagree, Slightly disagree, Neither agree nor disagree, Slightly Agree, Agree, Strongly agree*

Reliability α : .97

Items

JR_1: We receive, on time, the information needed to do our jobs

JR_2: We are satisfied with the way we are kept informed about issues in the workplace

JR_3: There is good communication across the different sections/work groups

JR_4: Work issues are openly discussed between workers and supervisors

JR_5: A good communication flow exists up and down the chain of command (or equivalent)

JR_6: We are encouraged to show initiative

JR_7: We are treated as responsible people

JR_8: We are trusted to do our work

JR_9: Supervisors set clear goals and objectives for the team

JR_10: Supervisors devote sufficient effort to safety in the workplace

JR_11: We trust our supervisors

JR_12: Supervisors listen to safety concerns and react appropriately

JR_13: Our training has prepared us well for the duties of our current jobs

JR_14: Work related training is carried out at appropriate intervals

JR_15: Safety issues are given a high priority in training courses within Defence

JR_16: Our safety training goes above and beyond minimum requirements

JR_17: We have useful and well developed safety training activities

JR_18: Safety is consistently emphasised during our training

JR_19: The senior manager (Commanding Officer) is genuinely committed to safety

JR_20: The management of safety is a high priority

JR_21: Appropriate corrective action is taken when senior managers are told about unsafe practices

JR_22: We are given support by management even if following safety rules affects operational activities

JR_23: There is sufficient equipment for allocated tasks to be effectively completed

JR_24: Our workplace facilities are adequate for the safe performance of our duties

JR_25: There is sufficient protective clothing and equipment available for tasks to be carried out safely

JR_26: Necessary safety equipment is always accessible

Table 3 presents the scoring key and reliabilities for the scales and subscales formed from these items.

Table 3. Reliability Estimates for Job Resources Subscales and Scale

Subscale/Scale	Items	α
Communication	1, 2, 3, 4, 5	.90
Autonomy	6, 7, 8	.91
Supervisory Support	9, 10, 11, 12	.90
Training	13, 14, 15, 16, 17, 18	.87
Safety Commitment	19, 20, 21, 22	.91
Equipment and Facilities	23, 24, 25, 26	.85
Full Job Resources Scale	Items 1-26	.97

Section 4 – Mediating variables

Strain

The K10 (Kessler et al., 2002) is more properly called a measure of psychological distress (and depression) than a measure of strain but in an Australian Defence Force environment scores are generally low and the label “Strain” is preferred in this safety climate context. The items are shown in Table 4.

Table 4. K10 Items

Instructions: *The following questions inquire about your health and wellbeing. Please respond to each statement using the scale provided. In the past four (4) weeks how often did you feel:*

Response Options: *None of the time, A little of the time, Some of the time, Most of the time, All of the time*

Reliability α : .92

Items

K10_1:tired for no good reason.

K10_2:nervous.

K10_3:so nervous that nothing could calm you down.

K10_4:helpless.

K10_5restless or fidgety.

K10_6:so restless that you could not sit still.

K10_7:depressed.

K10_8:everything was an effort.

K10_9:so sad that nothing could cheer you up.

K10_10:worthless.

Fatigue

The fatigue scale is the Occupational Fatigue Exhaustion Recovery (OFER) scale (Winwood, Lushington, & Winefield, 2006). This is a commercial scale, so items are not displayed here. The scale is used to measure Chronic Fatigue, Acute Fatigue, Need for Recovery, and an overall Fatigue score.

Job Satisfaction

A single item was used to assess Job Satisfaction. The stem was: *Please rate your level of satisfaction with your current job.* The response options are: a) *Very low*, b) *Low*, c) *Satisfactory*, d) *High*, e) *Very high*.

Section 5 – Safety Behaviours

Incident Reporting

Table 5. Incident Report Items

Introductory Wording: *Below are some common barriers to formally reporting Work Health and Safety events and Aviation Safety occurrences. Using the provided scale, indicate the degree to which these barriers act as a deterrent in your unit/workplace.*

Response Options: *Strongly disagree, Disagree, Slightly disagree, Neither agree nor disagree, Slightly Agree, Agree, Strongly agree*

Reliability α : .85

Items

Reporting_1: Reporting safety concerns creates additional workload

Reporting_2: Reporting safety concerns interferes with our real work

Reporting_3: The reporting process is more complicated than it needs to be

Reporting_4: The reporting process is too time consuming

Reporting_5: Reporting safety concerns is unlikely to lead to system changes

The scale formed from these five items was reflected so that a high score indicated a favourable attitude to reporting. In 2016, the reliability estimate for this scale was .85.

Noncompliance

Table 6. Noncompliance Items (Individual and Group)

Introductory Wording: *This section examines issues that have been found to affect performance and safety-related behaviour. Please rate your level of agreement with each statement. Make your rating based on how things are at present*

Response Options: *Strongly disagree, Disagree, Slightly disagree, Neither agree nor disagree, Slightly Agree, Agree, Strongly agree*

Reliability α : .89 (SB_1 to SB_3 = .78; SB_4 to SB_7 = .89)

Items

Individual

SB_1: I have taken risks, beyond those inherent in my job, in order to get a task done

SB_2: I am prepared to overlook some rules in order to get the job done more quickly

SB_3: I am prepared to undertake a task a better way if I consider the approved procedure or process to be overly cautious or inefficient

Group

SB_4_: Supervisors sometimes 'turn a blind eye' when rules are bent

SB_5: People use undocumented and/or unauthorised workarounds

SB_6: People have intentionally not complied with an approved procedure or process

SB_7: Written procedures often do not reflect how the job is done

Factor analysis of these items supported both a one-factor and a two-factor (Individual and Group) solution.

Errors

In the case of errors, because *Snapshot* is administered electronically, it is possible to use branching techniques to present lists of possible errors that are specific to different working environments (e.g., pilots, aircrew, observers, maintainers). When this approach is taken, it is usual to ask how often the individual has made a particular type of error and to sum the items to form an Error Types score.

A more generic approach involves asking respondents how often they have made errors for particular reasons and to sum the items to form an Error Causes score. Using this approach, the same questions can be presented to all respondents. The Error Causes scale has been a feature of all *Snapshot* questionnaires and many other Australian Defence Force Aviation safety climate surveys. The items are shown in Table 7.

Table 7. List of Error Items

Introductory wording: *Everybody makes errors on the job. Below are some of the common reasons why people make errors. Using the given scale, indicate how often you have experienced each of the causes of error over the past three (3) months.*

Response Options: *Never, Rarely, Sometimes, Often*

Items

Errors_1: I make errors because of stress

Errors_2: I make errors because of distractions

Errors_3: I make errors because of tiredness

Errors_4: I make errors because of time pressure

Errors_5: I make errors because of too many things to do

Errors_6: I make errors because of lack of concentration

Errors_7: I make errors because of lack of knowledge

Errors_8: I make errors because of forgetfulness

Errors_9: I make errors because of poor teamwork

Errors_10: I make errors because I do not have the right equipment/tools

Section 6 - Unit Performance

The seven items assessing unit performance are presented in Table 8.

Table 8. Unit Performance Items

Introductory Wording: *This section explores your personal reactions to your current work and your views on how well you and your unit are performing. Make your rating based on how things are at present*

Response options: *Strongly disagree, Disagree, Slightly disagree, Neither agree nor disagree, Slightly Agree, Agree, Strongly agree.*

Reliability α : .89

Items

UnitPerf_1: We work efficiently

UnitPerf_2: Work output is high

UnitPerf_3: We are consistently effective in meeting our objectives

UnitPerf_4: We contribute significantly to Defence capability

UnitPerf_5: It is acceptable to challenge the way things are done

UnitPerf_6: We review the way in which we complete our tasks

UnitPerf_7: There is genuine focus on continuous improvement

In 2016, analyses of these items supported either a one-factor or a two-factor (representing Outputs and Improvement) solution.

Section 7 - Additional Scales in Snapshot 2016

Documentation – Maintainers

In 2016, different documentation items scale were presented to maintainers and aircrew.

Table 9. Maintenance-Specific Documentation Items

Introductory wording: *This section examines issues related to the maintenance workforce. Please use the provided rating scales to indicate how things are at present.*

Response Options: *Strongly disagree, Disagree, Slightly disagree, Neither agree nor disagree, Slightly Agree, Agree, Strongly agree.*

Reliability α : .87

Items

MDoc_1: Technical manuals related to work are easy to use

MDoc_2: Technical manuals related to work are up-to-date

MDoc_3: Operating procedures are accurately described in our technical manuals

MDoc_4: I have no trouble getting access to technical manuals

MDoc_5: It does not take long to learn how to use our technical manuals

MDoc_6: Updates to our technical manuals are handled in a timely manner

MDoc_7: We can feel confident about the accuracy of the information in our technical manuals

MDoc_8: There are too many sources of information that we need to consult in addition to our technical manuals

MDoc_9: We do not have enough time to read all the documentation

MDoc_10: We are interrupted part-way through tasks to perform other more urgent tasks

MDoc_11: Electronic devices used for technical manuals are fit for purpose

Factor analysis of the documentation items identified two underlying factors (Accuracy and Ease of Use) that were highly-correlated ($r = .51$) and some factorial complexity was also evident, so a one-factor solution is preferred. The Documentation scale can be added to the Job Resources set.

Documentation - Aircrew

Aircrew were asked to complete four documentation items in a section of Snapshot that examined issues specific to aircrew work roles. The items are shown in Table 10.

Table 10. Aircrew-Specific Documentation Items

Instructions: *This section examines issues specific to aircrew work roles. Please use the provided rating scales to indicate how things are at present.*

Response Options: *Strongly disagree, Disagree, Slightly disagree, Neither agree nor disagree, Slightly Agree, Agree, Strongly agree.*

Reliability α : .87

Items

ADoc_1: Operating manuals related to work are easy to use

ADoc_2: Operating manuals related to work are up-to-date

ADoc_3: Operating procedures are accurately described in our technical manuals

ADoc_4: Updates to our operating procedures are handled in a timely manner

Factor analysis supported the formation of a single scale.

Just Culture

Five items were used to assess Just Culture.

Table 11. Just Culture Items

Instructions: Same as those used for Job Resources

Response Options: Same as those used for Job Resources

Reliability α : .91

Items

JC_1: We seek to learn from honest mistakes rather than apportion blame

JC_2: We can report safety discrepancies without fear of negative consequences

JC_3: We are confident that when we report our errors we will be treated fairly

JC_4: Appropriate action is consistently taken when people violate safety procedures or rules

JC_5: People will speak up when someone is working unsafely

It can be treated as a Job Resource.

Detachment

Three detachment items were included to assess the buffering effect of leisure time on strain.

Table 12. Detachment Items

Introductory Wording: *The following statements are about your experience in detaching from the demands of work in the past month. Please rate your level of agreement with each statement.*

Response Options: *Strongly disagree, Disagree, Slightly disagree, Neither agree nor disagree, Slightly Agree, Agree, Strongly agree*

Reliability α : .82

Items

Detach_1: I don't think about work at all

Detach_2: I distance myself from work

Detach_3: I get a break from the demands of work

Section 8 - References

- Cooper, R., & Fogarty, G.J. (2015). The Snapshot survey: An X-Ray view. *Aviation Safety Spotlight*, 3, 34-39. See <https://eprints.usq.edu.au/29124/>
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- Winwood, P. C., Lushington, K., & Winefield, A. H. (2006). Further development and validation of the Occupational Fatigue Exhaustion Recovery (OFER) scale. *Journal of Occupational and Environmental Medicine*, 48(4), 381-389. doi:10.1097/01.jom.0000194164.14081.06