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A STUDY ON STRESS MANAGEMENT PRACTICES AMONG EMPLOYEES AT AIR WORKS INDIA ENGINEERING PVT LTD, HOSUR

[*1]Dr. Dhanasekaran M., [2]Balaji R.

[1]Department of Management Studies, Adhiyamaan College of Engineering. (Autonomous)

2Department of Management Studies Adhiyamaan College of Engineering (Autonomous), Hosur.

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***Corresponding Author: Dr. Dhanasekaran M.**

Department of Management Studies, Adhiyamaan College of Engineering. (Autonomous)

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ABSTRACT

Human Resource Management plays a pivotal role in organizational success, particularly in safety-critical industries like aviation. This study examines stress management practices at Air Works India Engineering Pvt Ltd, Hosur — a leading Maintenance, Repair and Overhaul (MRO) service provider. Employees in this sector face unique occupational stressors including heavy workload, rotational shift duties, time pressure, and high safety responsibility. Based on a descriptive research design using structured questionnaires administered to 150 respondents, this study employs percentage analysis, Chi-square, and ANOVA tests. Findings reveal that poor communication (60%), family problems (53.4%), and time pressure (50.7%) are the dominant stressors. Meditation and prayer (71.3%), physical exercise (70.7%), relaxation (69.4%), and training & development (64.7%) are identified as the most effective stress-reduction mechanisms. Statistical analysis confirms significant differences in stress management perceptions across employee groups. The study concludes that structured, HR-led stress management programmes can significantly enhance employee performance, well-being, and aviation safety outcomes.

KEYWORDS: Stress Management, Aviation Industry, MRO, Employee Well-being, Occupational Stress, HRM, Air Works India Engineering

I. INTRODUCTION

Human Resource Management (HRM) is indispensable to organizational growth, particularly in high-pressure industries. In aviation, where employees handle safety-critical Maintenance, Repair and Overhaul (MRO) tasks, stress management becomes a non-negotiable HR priority. Even minor lapses in concentration caused by unmanaged stress can lead to catastrophic safety failures.

Air Works India Engineering Pvt Ltd is one of India's premier MRO service providers, headquartered in Mumbai with a significant operational facility in Hosur, Tamil Nadu. The company delivers aircraft line maintenance, base maintenance, component overhaul, and technical support to both domestic and international clients. The high-precision, time-sensitive nature of MRO work exposes its workforce to considerable occupational stress.

This study investigates the causes and consequences of stress among Air Works employees, evaluates existing stress management interventions, and proposes evidence-based HR recommendations to build a more resilient and productive aviation workforce.

II. LITERATURE REVIEW

Hans Selye (1956): Introduced the concept of the General Adaptation Syndrome (GAS) — alarm, resistance, and exhaustion — establishing the physiological foundation for understanding occupational stress.

Lazarus & Folkman (1984): Proposed the Transactional Model of Stress, emphasizing problem-focused and emotion-focused coping as key responses to work-related stressors.

Karasek (1979): Developed the Job Demand-Control (JDC) Model, demonstrating that high job demands combined with low worker autonomy generate maximum stress — directly applicable to MRO environments.

Cooper & Marshall (1976): Identified key workplace stressors — role conflict, overload, and poor structure — all prevalent in aviation maintenance organisations.

Ivancevich & Matteson (1980): Proposed practical stress management interventions including time management, relaxation techniques, and organisational support programmes.

Shenoy & Aithal (2018): Concluded that structured employee well-being and stress management programmes are essential for improving productivity and job satisfaction in modern organisations.

Research Gap: Most existing literature focuses on corporate and manufacturing sectors. There is a notable deficit of empirical studies examining stress management in Indian aviation MRO organisations, particularly from an employee-centric HR perspective — a gap this

study addresses.

III. OBJECTIVES

- To analyse the stress management practices followed at Air Works India Engineering Pvt Ltd, Hosur
- To identify the major causes of occupational stress in the MRO aviation environment
- To evaluate the impact of stress on employee performance, safety, and well-being
- To assess the effectiveness of HR-led stress reduction techniques
- To recommend improvements for a more effective, structured stress management framework

IV. RESEARCH METHODOLOGY

Research Design: Descriptive and analytical. The study describes existing stress management practices and analyses the effectiveness of various interventions.

Data Collection: Primary data were collected via a structured Likert-scale questionnaire (1 = Strongly Disagree to 5 = Strongly Agree) across 25 items. Secondary data were sourced from academic journals, books, and company documents.

Sample: 150 respondents from Air Works India Engineering Pvt Ltd, Hosur, selected using convenience (non-probability) sampling across engineering, quality, HR, operations, and technical departments.

Statistical Tools: Percentage analysis, Chi-square test, ANOVA, and graphical representation.

Table 1: Demographic Profile of Respondents

	HSC & Below	**13**	**8.7**
Experience	< 1 Year	62	41.3
	1–3 Years	60	40.0
	4–6 Years	18	12.0
	> 6 Years	10	6.7
Employment	On-Roll	93	62.0
	Contract	37	24.7
	Apprentice	20	13.3

Source: Primary Data

V. DATA ANALYSIS AND INTERPRETATION

5.1 Major Stress Factors

The table below presents the top stress-causing factors based on the combined Agree + Strongly Agree responses from the Likert-scale questionnaire.

Table 2: Key Stressors — Agreement Rates.

Category	Sub-Category	n	%
Age	18–25 Years	118	78.7
	26–35 Years	30	20.0
	36–45 Years	2	1.3
Gender	Male	75	50.0
	Female	75	50.0
Education	UG / PG	98	65.3
	Diploma/ITI	22	14.7
	Professional	17	11.3
Work pressure generates stress		66	44.0
Lack of cooperation causes stress		61	40.7

Source: Primary Data

Stress Factor	n (Agree+SA)	%
Lack of proper communication	90	60.0
Family problems create stress	80	53.4
Time pressure to complete work	76	50.7
Physical environment causes stress	75	50.0
Health problems cause stress	75	50.0

Table 1: Key Stressors — % Agreement.

Key Stressors (% Agree + Strongly Agree)	
Poor Comm.	**90 (60.0%)**
Family Prob.	**80 (53.4%)**
Time Press.	**76 (50.7%)**
Phys. Env.	**75 (50.0%)**
Work Press.	**66 (44.0%)**
Lack Coop.	**61 (40.7%)**

Interpretation: Poor communication ranks as the highest stressor (60%), followed by work-life spillover from family issues (53.4%) and time pressure (50.7%). These findings highlight the need for immediate communication and workload management interventions.

5.2 Stress Management Techniques — Effectiveness

Table 3: Effectiveness of Stress Relief Techniques

Technique	n (Agree+SA)	%
Meditation & Prayer	107	71.3
Physical Exercise	106	70.7
Relaxation Techniques	104	69.4
Training & Development	97	64.7
Improved Working Conditions	93	62.0
Financial Motivation	93	62.0
Company Initiatives (external)	72	48.0
Family Counselling	73	48.7

Source: Primary Data

Table 2: Stress Relief Techniques — Effectiveness. (%)

Stress Management Techniques (% Agreement)	
Meditatio n	**107 (71.3%)**
Exercise	**106 (70.7%)**
Relaxatio n	**104 (69.4%)**
Training	**97 (64.7%)**
Work Cond.	**93 (62.0%)**
Fin. Motiv.	**93 (62.0%)**

Interpretation: *Holistic wellness approaches — meditation (71.3%), exercise (70.7%), and relaxation (69.4%) — are rated most effective, suggesting employees value non-work interventions as primary stress relief. Training & development (64.7%) ranks highest among organisational tools.*

5.3 Impact of Stress on Performance

Table 4: Stress Impact on Performance & Environment

Statement	% Agree	% Disagree
SM techniques improve work environment	64.0%	18.0%
Stress impacts basic performance	60.0%	24.0%
Open communication on issues	60.0%	24.0%
Comfortable with existing SM tools	52.7%	24.0%
Frustration from excessive stress	50.7%	31.3%

Source: Primary Data | SM = Stress Management

A clear majority (60%) confirmed that unmanaged stress negatively impacts their performance. Notably, 64% agreed that implementing stress management techniques would improve the work environment, while only 52.7% are satisfied with existing tools — indicating significant room for enhancement.

VI. STATISTICAL ANALYSIS

6.1 Chi-Square Test

A Chi-square test was conducted to examine whether there is a significant association between the purpose of using stress management tools and employee preferences.

Table 5: Chi-Square Test — Purpose of Stress Management Tools.

Parameter	Value	df	Sig.
Chi-Square (χ^2)	15.308	3	Yes
Critical Value	7.815	—	—
p-value	0.00157	—	< 0.05
Decision	Null Hypothesis Rejected — Significant Difference Exists		

Source: Primary Data

Since χ^2 (15.308) > critical value (7.815) at df = 3 and p = 0.00157 < 0.05, H_0 is rejected. There is a statistically significant difference in the purpose of stress management tool usage. Decision-making is the primary purpose, followed by reporting; performance monitoring is

the least preferred.

6.2 ANOVA Test

ANOVA was applied to test whether there are significant differences in the perceived effectiveness of stress management techniques across different employee groups.

Table 6: ANOVA — Effectiveness of SM Techniques.

Source of Variation	Observation	p-value	Decision
Between Groups	Significant variation	< 0.05	H_0 Rejected
Within Groups	Varied opinions	—	—
Conclusion	Significant differences exist across employee groups in SM effectiveness perception		

Source: Primary Data | SM = Stress Management

ANOVA results ($p < 0.05$) confirm statistically significant differences in stress management effectiveness across employee roles, experience levels, and employment types. This validates the need for role-specific stress management strategies rather than a one-size-fits-all approach.

VII. FINDINGS

- 78.7% of respondents belong to the 18–25 age group, indicating a predominantly young workforce more vulnerable to new-job stress.
- Gender distribution is perfectly balanced (50:50), ensuring unbiased representation of stress experiences.
- 65.3% hold UG/PG qualifications, reflecting an educated workforce with capacity for structured stress management participation.
- Poor communication (60%) is the leading stressor — the highest among all variables tested.
- Family-work stress spillover (53.4%) and time pressure (50.7%) are significant secondary stressors.
- Meditation & prayer (71.3%) and physical exercise (70.7%) are the most effective stress reduction tools according to respondents.
- Training & development (64.7%) is the highest-rated organisational stress management technique.
- 60% confirm workplace stress directly and negatively impacts their job performance.

- 64% believe structured stress management programmes would improve the overall work environment.
- Chi-square confirms significant differences in stress tool usage purpose ($\chi^2 = 15.308$, $p = 0.00157 < 0.05$).
- ANOVA confirms significant variation in perceived SM effectiveness across employee groups ($p < 0.05$).
- Only 52.7% are satisfied with existing stress management approaches, signalling scope for improvement.

VIII. SUGGESTIONS

- Establish structured weekly mindfulness and meditation sessions, given their highest effectiveness rating (71.3%).
- Redesign rotational shift schedules to limit continuous night-shift exposure and guarantee adequate recovery time.
- Strengthen internal communication through transparent briefings, digital communication platforms, and open-door HR policies.
- Deploy dedicated HR counsellors accessible to all employee categories, with special focus on junior and contract workers.
- Introduce performance-linked wellness incentives to align financial motivation with employee health goals.
- Formulate and implement a comprehensive Work-Life Balance (WLB) policy with flexible working arrangements where operationally feasible.
- Conduct quarterly stress-monitoring surveys using validated instruments (PSS, MBI) to track trends and evaluate interventions.
- Develop role-specific stress management plans recognising that stressor profiles differ significantly across engineering, operations, and administrative functions.
- Invest in physical work environment improvements — ergonomic workstations, noise control, adequate rest areas, and proper lighting.
- Integrate stress management competencies and wellness metrics into the annual performance appraisal framework.

IX. CONCLUSION

This study unequivocally establishes that stress management is a mission-critical HR function at Air Works India Engineering Pvt Ltd, Hosur. The aviation MRO environment —

characterised by precision requirements, strict deadlines, and zero-error tolerance — creates a high-stress ecosystem that demands proactive and structured intervention.

Key stressors identified include poor communication, time pressure, physical environment, and family-work spillover. The most effective relief mechanisms are holistic wellness practices (meditation, exercise, relaxation) supported by organisational interventions including training & development and financial motivation. Statistical evidence from Chi-square ($\chi^2 = 15.308$, $p < 0.05$) and ANOVA ($p < 0.05$) tests validates these findings with statistical significance.

While the organisation has implemented foundational HR policies and welfare programmes, the satisfaction gap (only 52.7% comfortable with existing tools) underscores the urgency for a more comprehensive, role-specific, and data-driven stress management framework. Ultimately, enhanced stress management will not only improve individual well-being and performance, but will directly strengthen aviation safety outcomes and long-term organisational productivity.

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