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Department of Defence
Brindabella Park

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2. Roller Manual Supplement Letter Ver 2.doc
IN90209

Dear Dave

Heavy Roller Options Study – Heavy Roller Operating Manual Supplement

SKM has been engaged to undertake a study into the options for the disposal or transfer of ownership of the Defence heavy roller fleet. Part of that study includes the preparation of a supplement to the Defence Heavy Roller Operations Manual to cover the operational capability of the modified roller. This letter details the findings of this element of the study.

Review of the modifications made to the roller buy Leighton Contractors, shows that the roller has been fitted with Bridgestone Industrial Service 16.00-25 32 Ply YS2 tyres. With these tyres fitted, the modified roller will have the following operational characteristics:

- Tyre Pressure. 1000 kPa.
- Maximum Mass. 50 t.

It is noted that whilst the tyres have a maximum load which would allow the current maximum mass to be exceeded the structural capacity of the roller frame and axle would need to be checked for their capacity to carry the additional load. At 10 km/h, the new tyres are rated to 16,875 kg. That would allow a total operating mass of around 67 t for the four wheeled roller.

Based on discussions with Leightons, the operation of the roller will be unaffected by the changes.

Using the operating characteristics detailed above, a stress with depth plot was generated for the modified roller using the specialised pavement design software Aircraft Pavement Structural Design System (APSDS). The stress width depth profile



was prepared using the stress with depth function of the software. The stress with depth profile for the modified roller is shown in **Annex A**.

Tyre Pressure – Maximum Mass Relationship

For the Defence heavy roller fleet, the Heavy Roller Operations Manual provides relationships between any given tyre pressure and the maximum allowable operating mass at that tyre pressure. As the tyre pressure increases, the allowable mass also increases. This relationship should be obtained from the tyre manufacturers for the newly fitted tyres to allow appropriate maximum masses to be utilised where sub-maximal tyre pressures are required.

Should you have any queries regarding this letter or require further information, please do not hesitate to contact the undersigned.

Yours sincerely

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Annex :

A. Modified Roller Stress with Depth Profile.

ANNEX A

AIRCRAFT STRESS WITH DEPTH PROFILES



Modified Roller Capability

