[0005a] In an aspect, the present disclosure refers to a tape elevation adjustment device for use with an aircraft arresting system, the tape elevation adjustment device comprising: a housing; a tape entrance area on the housing for receiving a tape and a tape exit area on the housing defining an area for the tape to exit the housing; a first lower horizontal sheave roller positioned within the housing nearest the tape exit area; a second upper horizontal sheave roller positioned within the housing nearest the tape entrance area, wherein the first lower horizontal sheave roller is offset and spaced apart from the second upper horizontal sheave roller; wherein tape entering the tape entrance area contacts the first lower horizontal sheave roller and is deflected upward as the tape pays out across the first lower horizontal sheave roller, wherein the second upper horizontal sheave roller only contacts the tape in order to prevent the tape from lifting off of the lower roller during a dynamic wave, wherein the tape enters the tape entrance area at a first lower elevation and exits the tape exit area at a second higher elevation.

[0005b] In another aspect, the present disclosure refers to an aircraft arresting system comprising the tape elevation adjustment device of the above aspect, a braking system and a runway edge sheave, wherein the tape elevation adjustment device is positioned between the braking system and the runway edge sheave, wherein the tape elevation adjustment device provides the ability to adjust inclination of the tape with respect to the braking system and the runway edge sheave.

[0005c] In another aspect, the present disclosure refers to a retrofitted aircraft arresting system wherein the tape elevation adjustment device of the above aspect is positioned between an existing energy absorbing braking system and an existing runway edge sheave.

[0005d] In another aspect, the present disclosure refers to a new aircraft arresting system comprising the tape elevation adjustment device of the above aspect.

[0006] In an example, there is provided a tape elevation adjustment device for use with an aircraft arresting system that has a braking system and a runway edge sheave positioned at each aircraft runway edge, the tape elevation adjustment device being mounted between the braking system and the runway edge sheave and comprising: a housing; a tape entrance area nearest the braking system that receives tape from the braking system and a tape exit area nearest the runway edge sheave through which exiting tape leaves toward the runway edge sheave; a first lower horizontal sheave roller positioned within the housing nearest the tape exit area; a second upper horizontal sheave roller positioned within the housing nearest the tape entrance area, wherein the first lower horizontal sheave roller is offset and spaced apart from the second upper horizontal sheave roller; wherein tape entering the tape entrance area contacts the first lower horizontal sheave roller and is deflected upward as the tape pays out across the first lower horizontal sheave roller, wherein the second upper horizontal sheave roller only contacts the tape in order to prevent the tape from lifting off of the lower roller during a dynamic wave, wherein tape enters the tape entrance area at a first lower elevation and exits the tape exit area at a second higher elevation. The tape may travel between the first and second horizontal sheave rollers. The first and second sheaves may function to adjust the elevation of the tape and redirect the tape path. The device may

be positioned with respect to an energy absorbing braking system and a runway edge sheave. The device provides the ability to adjust the inclination of the tape with respect to the energy absorbing braking system and the runway edge sheave. In use, the tape is twisted from horizontal to vertical at any point between the energy absorbing braking system, the tape elevation adjustment device, and the runway edge sheave.

[0007] The first and second horizontal sheave rollers comprise an upper sheave roller and a lower sheave roller. The upper sheave roller generally prevents the tape from lifting up off of the lower horizontal sheave roller. It is also possible to provide the device with a mounting plate. A further addition may be an additional anchoring feature configured to be anchored to soil for a mobile installation. The additional anchoring feature may comprise a soil install mounting plate and one or more stakes.

[0008] It is possible to retrofit the device into an existing aircraft arresting system by positioning the tape elevation adjustment device between an existing energy absorbing braking system and an existing runway edge sheave. Alternatively, it is possible for the device to be installed into a new aircraft arresting system.

What is claimed is:

1. A tape elevation adjustment device for use with an aircraft arresting system, the tape elevation adjustment device comprising:

a housing;

a tape entrance area on the housing for receiving a tape and a tape exit area on the housing defining an area for the tape to exit the housing;

a first lower horizontal sheave roller positioned within the housing nearest the tape exit area;

a second upper horizontal sheave roller positioned within the housing nearest the tape entrance area, wherein the first lower horizontal sheave roller is offset and spaced apart from the second upper horizontal sheave roller;

wherein tape entering the tape entrance area contacts the first lower horizontal sheave roller and is deflected upward as the tape pays out across the first lower horizontal sheave roller, wherein the second upper horizontal sheave roller only contacts the tape in order to prevent the tape from lifting off of the lower roller during a dynamic wave, wherein the tape enters the tape entrance area at a first lower elevation and exits the tape exit area at a second higher elevation.

2. The tape elevation adjustment device of claim 1, wherein the tape travels between the first and second horizontal sheave rollers.

3. The tape elevation adjustment device of claim 1, wherein the first lower horizontal sheave roller functions to adjust elevation of the tape and redirect a path of the tape.

4. An aircraft arresting system comprising the tape elevation adjustment device of claim 1, a braking system and a runway edge sheave, wherein the tape elevation adjustment device is positioned between the braking system and the runway edge sheave, wherein the tape elevation adjustment device provides the ability to adjust inclination of the tape with respect to the braking system and the runway edge sheave.

5. The aircraft arresting system of claim 4, wherein the tape is twisted from horizontal to vertical at any point between the braking system, the tape elevation adjustment device, and the runway edge sheave.

6. The tape elevation adjustment device of claim 1, further comprising a mounting plate.

7. The tape elevation adjustment device of claim 6, further comprising an additional anchoring feature configured to be anchored to soil for a mobile installation.

8. The tape elevation adjustment device of claim 7, wherein the additional anchoring feature comprises a soil install mounting plate and one or more stakes.

9. A retrofitted aircraft arresting system wherein the tape elevation adjustment device of claim 1 is positioned between an existing energy absorbing braking system and an existing runway edge sheave.

10. A new aircraft arresting system comprising the tape elevation adjustment device of claim 1.

11. The tape elevation adjustment device of claim 1, wherein the first horizontal sheave roller and the second horizontal sheave roller have the same diameter.

12. The tape elevation adjustment device of claim 1, wherein the tape exits the tape elevation adjustment device at a horizontal H2 and is vertically oriented, wherein a center of the horizontal tape at H2 is aligned with a center of the vertically oriented tape.