



# ARTS5505

DYfgcbU`]gYX`9b[ `]g\`@Ub[ i U[ Y`9b\UbW@a Ybh

HYfa `H\fYY`##`&\$&\$

GWcc`cZ< i a Ub]hYg`UbX`@Ub[ i U[ Yg`##`I BGK ``5ftg`UbX`GcWU`GwYbWg



7ci fgY'8YHJ]`g

7fYX]hDc]bhg`\*`

Gi a a UfmicZ'h\Y'7ci fgY

H\]g`Wci fgY`k ]``\Y`d`mci`hc`Yb\UbW`mci`f`9b[ `]g\`Ub[ i U[ Y`g\_]`g`]Zmci`gdYU\_`9b[ `]g\`Ug`U`gYW`bX`  
`Ub[ i U[ Y`" `b`UXX]h`cbz`h`g`Wci`fgY`dfcj`]XYg`mci`k`]h`h`Y`g\_]`g`hc`VY`Ub`Ui`hc`bca`ci`g`UbX`]bXYdYbXYbh`  
`YUfbYf`gc`h`U`h`mci`Wb`W`b`h`bi`Y`hc`Yb\UbW`mci`f`9b[ `]g\`Ub[ i U[ Y`g\_]`g`]bhc`h`Y`Z`h`fY`hc`UWX`Yj`Y`mci`f`  
UW]XYa`]WUbX`dfcZ]gg]cbU`[ cU`g`"Mci`k`]``]XYbh]Zmk` \]W`UgdYW`f`c`Zmci`f`9b[ `]g\`mci`k`ci`X`\_]`Y`hc`  
]a`dfcj`Y`UbX`h`Yb`XYg][`b`UbX`]a`d`Ya`Ybh`mci`f`ck`b`d`YfgcbU`dfc`YW`hc`UW`W`a`d`]g\`mci`f`[ cU`g`"

# 5ggYgga Ybh

## 5ggYgga YbhHUg\_g`

5ggYgga YbhHUg_	K Y][ \h	8i Y`8UHŸ	Ghi XYbh@YUfb]b[ Ci hWta Yg`5ggYggYX
DYfgcbU`dfc`YWhXYg][ b fDD8Ł	' \$i	\$- #/%#&\$&\$`%%`\$\$`DA	' ž( ž)
Dfc`YWh`c[ Vcc_`UbX`ci fbU`	&\$i	\$* #/%#&\$&\$`%%`\$\$`DA	%ž&
C fU`DfYgYbHU]cb`!`%\$ a ]bi HŸg`	&\$i	⊖`WUgg`cZ`Ughk YY_	( ž)
F YZYWj Y`YggUm	' \$i	&+ #/%#&\$&\$`%%`\$\$`DA	%ž&

## 5ggYgga Ybh8YHU]`g

5ggYgga Ybh%`DYfgcbU`dfc`YWhXYg][ b`fDD8Ł

GHUfhXUHŸ.`

@Yb[ h. `%) \$\$`k cfXg

8YHU]`g.

Ghi XYbhŸ`XYg][ b`hY]f`ck b`dYfgcbU`dfc`YWh`c`UXXfYgg`hY]f`ck b`9b[ `]g\`Ub[ i U[ Y`bYYXg`"H\YmUFY  
fYei ]fYX`h`gdYWZm`hY]f`dYfgcbU`dfc`YWh`c`U`ž`VUW\_`fci bXž`a`Yh`cXž`fYgci fWgž`dfc[ fYgg`a`YUgi fYa`Ybž  
h]a`Y`bYž`gW`YXi`Y`UbX`Ubh]W]dUH`X`ci`hWta`Yg`"H\YmbYYX`h`XYj`Y`cd`hY]f`DD8`VUgYX`cb`fY`Yj`Ubh  
]hYfUh`fY`cZ`hY`Z]Y`X`WcbW`fbYX`"H\Y`k`cfX`"ja`]h]g`%)`\$\$`"

Ghi XYbhŸ`fYW]j`Y`k`f]hYb`ZYXVUW\_`VUgYX`cb`fi`Vf]Wg`".....

Hi`fb]h]b`gYh]b[ .`H\]g`Ugg][`ba`Ybh]g`gi`Va`]hYX`h`fci`[ \`Hi`fb]h]b`UbX`ghi`XYbhŸ`WUb`gY`Y`Hi`fb]h]b`g]a`]Uf]hm  
fYdcfŸg`"

5ggYgga Ybh&.`Dfc`YWh`c[ Vcc\_`UbX`ci fbU`

GHUfhXUHŸ.`

8YHU]`g.

Ghi XYbhŸ`fYW`fX`hY]f`YUfb]b[ `UW]j`]hYg`UbX`\_YYd`fYZYW]j`Y`ci`fbU`cb`U`fY[ i`Uf`VUg]g`Ug`d`UbbYX`]b`hY]f  
DD8`"H\YmUFY`fYei`]fYX`h`gdYbX`" ` \$`ci`fg`cf`a`cfY`Zcf`hY]f`dYfgcbU`dfc`YWh`"

Ghi XYbhŸ`fYW]j`Y`k`f]hYb`ZYXVUW\_`VUgYX`cb`fi`Vf]Wg`"

Hi`fb]h]b`gYh]b[ .`H\]g`]g`bchU`Hi`fb]h]b`Ugg][`ba`Ybh

5ggYgga Ybh' . 'CfU`DfYgYbHh]cb`!`%\$`a ]bi hYg

GHUfhXUHY . `Bch5dd`]WUV`Y

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8YHU]`g.

Gh XYbthg`dfYgYbHh]f`YUfb]b[ `\\[ `\\[ `\\hg`Zfca`h`Y]f`dYfgcbU`dfc`YWh`Zcf`UVci`h`%\$`a ]bi hYg`hc`]bgd]fY`dYYfg`hc`Wcb]bi`Y`hc`Yb`\\UbW`h`Y]f`Ub[ i U[ Y`g\_]`g`Yj`Yb`U`Zhf`Wca`d`Yh]b[ `h`Y`Wci`fgY`"H`\\YmUFY`fYei`]fYX`hc`gi`Va`]hUb`UVghfUWhfUVci`h`%\$`k`cfXgk`UVci`hk`\\Uh`h`YmUFY`[`c]b[ `hc`dfYgYbHh]U`Wci`d`Y`cZk`YY`g`VY`ZcfY`h`Y`dfYgYbHh]cb`XUm`Gh`XYbthg`fYW`j`Y`k`f]h`Yb`ZYXVUW`\_`Zfca`h`hc`f`cb`UVghfUWh`g`f`%\$`i`E`UbX`Zfca`d`YYfg`cb`dfYgYbHh]cb`f`%\$`i`E`VUgYX`cb`fi`Vf]Wg`"

5XX]h]cbU`XYHU]`g.

5VghfUWh`g`UFY`Xi`Y`cb`Hi`fb]h]b`Vm`%da`ZA`cbXUm`-`B`cj`Ya`VYf`fK`YY`\_-`E`"DfYgYbHh]cbg`UFY`Xi`Y`]b`h`Y`WUgg`cZ`h`Y`"Ughk`YY`\_"`

Hi`fb]h]b`g`Yh]b[ . `H`\\]g`Ugg][`ba`Ybh]g`gi`Va`]h`X`h`fci`[ `\\`Hi`fb]h]b`UbX`ghi`XYbthg`WUb`g`YY`Hi`fb]h]b`g]a`]Uf]m`fYdcfng`"

5ggYgga Ybh( . `F`YZYW`h]j`Y`YggUm

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@Yb[ h . `&\$\$\$`k`cfXg

8YHU]`g.

Gh XYbthg`UbU`m]WU`m`UbX`W]h]W`m`fYZYW`h]cb`h`Y]f`YUfb]b[ `YI`dYf]YbW`cZ]a`d`Ya`Ybh]b[ `h`Y]f`ck`b`dYfgcbU`dfc`YWh`UbX`di`h`UW`Yj`UV`Y`UW`h]cbg`]b`U`d`Ub`Zcf`h`Y`bYI`h`YUfb]b[ `ghU[ Y`"H`\\Y`k`cfX`"ja`h]g`&\$\$\$`"

Gh XYbthg`fYW`j`Y`k`f]h`Yb`ZYXVUW`\_`VUgYX`cb`fi`Vf]Wg`"H`\\]g`]g`h`Y`Z]bU`UggYgga`Ybh`Zcf`Uth`bXUbW`di`fdcgYg`"

Hi`fb]h]b`g`Yh]b[ . `H`\\]g`Ugg][`ba`Ybh]g`gi`Va`]h`X`h`fci`[ `\\`Hi`fb]h]b`UbX`ghi`XYbthg`WUb`g`YY`Hi`fb]h]b`g]a`]Uf]m`fYdcfng`"



F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

Gh Xmjb[ `]b`9b[ `]g\.`GhfUHY[ ]Yg`Zcf`Gi`WwYgg`]b`<][ \Yf`9Xi`WU]cb`f&\$\$%+£

F YWca a YbXYX`F Ygci fWg

6cc\_`-`9ggYbh]U`g`cZ9ggUmK`f]h]b[.`K` \UhiA`Uf`\_Yfg`@cc\_`:`cf`f&\$\$%+£

6cc\_`-`@YUfbYf`9b[ `]g\.`5`HYUWX`Yffg];`i`]XY`hc`bHYfZYfYbW`UbX`C`hYf`DfcV`Ya`g`f&\$\$%£

6cc\_`-`7`f]h]WJ`F`YUX]b[ `UbX`K`f]h]b[ `]b`h\Y`8][ ]U`5[ Y.`5b`bHfcXi`Wc`fm7`ci`fgYVcc\_`f&\$\$%\*£

6cc\_`-`@cb[ a`Ub];`fUa`a`Uf`cZGdc`\_Yb`UbX`K`f]h]b[ `]b`h\Y`8][ ]U`5[ Y.`5b`bHfcXi`Wc`fm7`ci`fgYVcc\_`f&\$\$%\*£

6cc\_`-`:`cfY][ b`@Ub[ i`U[ Y`@YUfb]b[ `f%`-`-`,`£

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6cc\_`-`;`]`Y`hU`;`c.`HYUWX]b[ `Dfcbi`bW]U]cb`hc`5Xi`hg`f&\$\$-`£

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≠mci`YbWci bHYf`U`dfcV`Ya`k` \Yb`UHYa` dh]b[`hc`gi`Va`]hmc`i`f`Ugg][`ba`YbhiHfci`[`\`Hi`fb]h]bzd`YUgY`  
HY`Yd\cbY`9I`HYfbU`Gi`ddcfhcb`-`,`,)`````%cf`Ya`Uj`hYa`icb`YI`HYfbU`HY`hgi`ddcfh4`i`bgk`"YXi`"Ui`""`Gi`ddcfh`  
\ci`fg`UfY`,`.\$\$Ua`-`-%\$.\$\$da`icb`k`YY`XUmg`UbX`-`.\$\$Ua`-`,`)`. \$\$da`icb`k`YY`YbXg`f1`\*)`XUmg`U`mY`Uf2`"≠mci`  
UfY`i`bUV`Y`hc`gi`Va`]hmc`i`f`Ugg][`ba`YbhiXi`Y`hc`U`ZU`ihk`]h`Hi`fb]h]b`mci`ia`UmUdd`mZc`f`Ub`YI`HYbg]cbz`Vi`hmc`i`  
a`i`ghfYhU]b`mci`f`h]W`Yhbi`a`VYf`Zca`9I`HYfbU`Gi`ddcfhfU`cb[`k`]h`Ubmc`h`Yf`fY`Yj`UbhXcW`a`Ybhtg`L`hc`  
]bWi`XY`Ug`Yj`]XYbVW`hc`gi`ddcfhmc`i`f`YI`HYbg]cb`Udd`]W]h]cb`"≠mci`Ya`Uj`9I`HYfbU`Gi`ddcfhmc`i`k`]`  
Ui`hca`U]WU`mifYW]j`Y`U`h]W`Yhbi`a`VYfz`Vi`h]Zmci`HY`Yd\cbY`mci`k`]`bYYX`hc`gdYW]Z]WU`mUg`Zc`f`cbY`"  
Hi`fb]h]b`U`gc`dfcj`]XYg`i`dXUH`g`cb`h`Y]f`gmghYa`ig`hU`h`g`cb`Hk`]hYf`"

;`YbYfU`mz`UggYgga`YbhiUg\_g`a`i`ghVY`gi`Va`]hYX`Y`YWfcb]WU`mj`]U`Y]h`Yf`Hi`fb]h]b`cf`U`A`ccX`Y`  
Ugg][`ba`Ybhi`h`]bghU`bVW`g`k` \YfY`h`lg`]g`bchidcgg]V`Yz`]hk`]`VY`ghU`h`X`cb`mci`f`Wci`fgY`g`A`ccX`Y`g]h`k`]h`  
U`HYfbU]h]`Y`gi`Va`]gg]cb`XYhU]g`"

:`cf`]bZcfa`U]cb`cb`\ck`hc`gi`Va`]hUgg][`ba`Ybhtg`cb`]bY`j`]U`A`ccX`Y`. \`hhdg`#gh`XYbhi`bgk`"YXi`"Ui`#ck`!  
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## 5 WUXYa ]W< cbYgmiUbX`D`U[ ]Uf]ga

D`U[ ]Uf]ga `]g`i`g]b[ `h`Y`k`c`f`X`g`c`f`]X`Y`U`g`c`Z`c`h`Y`f`g`i`U`b`X`d`f`Y`g`Y`b`h]b[ `h`Y`a` `U`g`m`c`i`f`c`k`b`" `#`W`U`b`h`U`\_`Y`a` `U`b`m`  
Z`c`f`a` g`z`Z`c`a` `X`Y`]V`Y`f`U`h`Y` `W`X`Y`U`h]b[ `h`c` `U`W`W`Y`X`Y`b`h`U` `m`i`W`c`d`m]b[ `Z`c`a` `U`g`c`i`f`W` `k` ]h`c`i`h`U`W`\_`b`c`k` `Y`X[ `Y`a` `Y`b`h`

I`B`G`K` `[`f`c`i`d`g`d`U[ ]Uf]ga `]b`h`c` `h`Y` `Z`c` `c`k` ]b[ `W`U`h`Y`[`c`f`]Y`g.

- i bXYfghUbx'mci f'f][ \hg'UbX'fYgdcbg]V]h]Yg'Ug'U'gh XYbhUhl BGK
- VY'Uk UfY'cZd'U[ ]Uf]ga ž'Wc'dmf][ \hž' BGK 'Gh XYbh7cXY'cZ7cbXi W'Ubx'5Ww'dhUV'Y'I gY'cZ I BGK '⇒H'F Ygci fW'g'Dc`]Wm
- VY'Uk UfY'cZh'Y'ghUbxUfXg'cZVY\Uj ]ci f'YI dYW'X'cZYj Yfmcby`]b'h'Y'I BGK 'Wc'a a i b]m
- `cWJh'gYfj ]W'g'UbX'j]bZcfa Uh]cb'UVci hl BGK 'UbX'I BGK '@]VfUfm

Gca Y'cZh'YgY'UfYUg'k ]`VY'ZJa ]]Uf'hc'mci ž'ch'Yfg'k ]`VY'byk "; U]b]b[ 'U'gc`]X'i bXYfghUbx]b[ 'cZU`h'Y fY'UH'X'UgdYW'g'cZ9@G9'k ]`Y'd'mci 'a U\_Y'h'Y'a cghcZmci f'gh X]Yg'Uhl BGK ""

[\hd. #gj V'YWf i \]XYg" \]VfUfm'i bgk "YXi "Ui #'\]gY#JVci h' \]gY](#)

5 WUXYa ]W=Zcfa Uh]cb

: cf`YggYbh]U`ghi XYbh]bZcfa Uh]cb`fY`Uh]b[ `tc.