



ARTS5204

F YgYUfVX 'UbX'h\Y'7 fYUhj] Y'5 frg

HYfa 'Hk c''##'&\$&\$

7ci fgY`Cj Yfj]Yk

GHJZ`7cbHJW`8YHJ]`g

7cbj Ybcfg

B Ua Y	9a U]`	5j U]`UV]`]m	@cW]h]cb	D\cbY
9f]b`6fUbb][Ub	Y"VfUbb][Ub4 i bgk "YXi "Ui	VmYa U]`	K YVg]Yf`%%-	

GWcc`7cbHJW`bZcfa Uh]cb

GWcc`cZGcW]U`GWYbWg

Fcca `%) -

A cfj Yb`6fck b`7 &\$

Ya U]`.gcgg4 i bgk "YXi "Ui

d\cbY. '\$&-' ,) `% \$+

7ci fgY'8YHJ]`g

7fYX]hDc]bqg`*`

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

H\]g`W`ci fgY`XYj Y`cdg`cVgYfj U]h]cbU`z`W]h]W]z`UbX`UbU`nt]W]`hc`g`Z`c`f`Udd`]W]h]cb`hc`fYgYUfW`]b`h`Y`WYU]h] Y`Uf]g`" `#VY[]bg`k`]h`U`Z`W`g`cb`Uf]h]UbX`Uf]h]g]g/i`bXYfgh]UbX]b[`h`Y`a`U]f]f]U`g`UbX`dfcW]ggYg`cZ`WYU]h] Y`dfUW]W`]b`\\]g]h]f]W]z`X]g]W]d`]bUf]m]UbX`U]Yg]h]Y]h]W]W]b]h]Y]h]g`"5b`i`bXYfgh]UbX]b[`cZ`h`Y`f`c`Y`cZ`fYgYUfW]z`h`Y`c`f`n`z`UbX`W]h]W]g]a`k`]h`]b`h`Y`Uf]g`]g`XYj Y`cdYX`z`U`cb[g]XY`Y`h`]W]`dfcW]ggYg`Z`c`f`i`bXYf]U_]b[gi`W`k`cf`_"`M`c`i`k`]`VY`]b]h]c`X`i`WYX`h`c`a`YX]U]g`dYW]Z]W]UbX`f]U`b]g!X]g]W]d`]bUf]m]Z`c`f`a`g`cZ`W`c`a`d`c`g]h]c]bU`UbU`m]g]g`z`k`]h`g`dYW]Z]W]U]h]Y`b]h]c]b`h`c`h`Y`d`f`U`W]W]g`UbX`dfcW]ggYg`cZ`h`Y`Uf]h]g]h`6Y`m`c`b`X`h`Y`h`f`a`g`cZ`h`Y`k`cf`_`cZ`Uf]h]UbX`h`Y`f`c`Y`cZ`h`Y`Uf]h]g]h`z`UbU`m]h]W]`UbX`h`Y`c`f`Y`h]W]`a`Y`h`c`X`g`X`f`U`k`]b[`c`b`X]g]W]d`]bYg`k`]h`]b`UbX`VY`m`c`b`X`h`Y`Uf]g`k`]`VY`W`c]j`Y`f`Y`X`UbX`a`Um]b]W]i`XY`Ya`d]f]W]z`Z`c`f`a`U`z`d`c`g]h]g]h]f`i`W]i`f`U`z`d`Y`b`c`a`Y`b`c`c[]W]z`a`U]f]f]U`UbX`W`h`f`U`U`d`d`f`c`U`W`X`Y`g`"H`Y`f`Y`]g`U`Z`W`g`cb`5i`g]h]U`]b`W`c`b`h`b`h`z`]b]W]i`X]b[`]b]X[]Y`b`c`i`g`Uf]h]g]h`z`UbX`h`Y`]f`d`U`W`k`]h`]b`]a`d`c`f]h]b]h]h]f]b]U]h]c]bU`b`Y`h`c`f`_`g`

7ci fgY`@YUfb]b[`Ci hW`c`a`Yg

%`F`Y`W`c`[`b]n`Y`UbX`UbU`m`Y`_`Y`m`h`Y`c`f]Y`g`cZ`W`Y`U]h]`]m]U`W`f`c`g`g`U`j`Uf]Y`h`m`c`Z`U`f]h]g]h]W]X]g]W]d`]b`Y`g`&`5`d`d`m`X]j`Y`f`g`Y`W]h]W]`Y`b`g`Y`g`h`c`W`Y`U]h]`Y`k`c`f`_]b]W]i`X]b[`]b]h]f`d`f`Y`h]h]j`Y`z`Z`c`f`a`U`z`U`Y`g`h`Y`h]V`z`d`Y`b`c`a`Y`b`c`c[]W]z`Y`a`d]f]W]z`d`Y`X`U[c[]W]z`g`c`W]c`c[]W]`" `<`c`b`Y`f`Y`g`Y`U`f`W`g_]`g`z`[U`h`Y`f]b[`d`f]a`U`f]m]UbX`g`Y`W`c`b`X`U`f]m]g`c`i`f`W`g`c`Z]b`Z`c`f`a`U]h]c]b`U`V`c`i`h`W]U`g`Y`g]h`X]Y`g`z`UbX`W]h]W]`m]U`g`g`Y`g`g]b[`g]i`W`k`f`Y`g`c`i`f`W`g`(" `5`d`d`m`k`f]h]b[`g_]`g`h`c`h`Y`UbU`m]g]g`UbX`W]h]h]e`i`Y`cZ`W`Y`U]h]`Y`d`f`U`W]W]g`UbX`U`g`g`c`W]U]h]X`X]g]W`c`i`fg`Y`g`

HYUW]b[`G`h`f`U`h`Y`[]Y`g`

CE`"``````?`Y`m]Y]i`U`a`d`Y`g`c`Z`X]g]W]d`]bUf]m]UbX`]b]h]f]X]g]W]d`]bUf]m]WYU]h] Y`dfUW]W]k`]`VY`X]g]W`ggYX`z`X`f`U`k`b`d`f]a`Uf]m]Z`c`a`U`W`f`c`g`g`h`Y`&`\$`h`UbX`&`%`g]h]V`W]b]h]f]Y`g`"

CE`"``````H`Y`W`c`i`fg`Y`k`]`VY`h`Y`U`a`h`U`i`[`h`k`]h`g`d`Y`W]U`]g]h]g`Z`c`a`h`Y`j`Uf]c`i`g`W`Y`U]h]`Y`X]g]W]d`]b`Y`g`]b`h`Y`G`W]c`c`c`Z`h`Y`5`f`r`g`UbX`A`Y`X]U/H`Y`U`h`f`Y`UbX`D`Y`f`Z`c`f`a`UbW`G`h`X]Y`g`z`A`i`g]W]z`A`Y`X]U`z`:]a`z`9`b[`]g`\\`UbX`7`f`Y`U]h]`Y`K`f]h]b[]`"

CE`"``````5`g`d`Y`W]U`Z`W`g`cb`k`f]h]b[`k`]`VY`XYj`Y`cd`Y`X`h`f`c`i`[`k`f]h]b[`Y]i`Y`f`W]g]Y`g`UbX`h`Y]i`h]U`b]U`m]g]g`"

CE`"``````H`Y`&`\\`f`g`Y`a`]b`U`f`g`k`]`XYj`Y`cd`h`Y`f`Y`e`i`]f`Y`X`_`b`c`k`Y`X[`Y`UbX`g_]`g`h`f`c`i`[`\\`j`Uf]c`i`g`a`Y`U`b`g`.]b]g]h]f]i`W]h]c]b`]b`U`W`c`b`h`b]h]X`Y`]j`Y`f`m]Z`c`f`a`U`h`z`[`f`c`i`d`d`f`c`Y`W]g`z`UbX`]b]X]j`]X`i`U`k`f]h]b[`h]U`g`_`"

CE`"``````C`b`]b`Y`Y`U`f]b]b[`k`]`gi`d`d`Y`a`Y`b]h]h`Y`Z]W]!`h`c!`Z]W]W`W`c`b]h]U`W]h]k`]h`d`c`X!`W]U]g]h`#`Y`W]i`f`Y`g`UbX`U`i`X]c!]`g]i`U`W]U`g]Y`g]h`X]Y`g`"

!`"``````G`h`X`Y`b]h]g`k`]`VY`Y]i`d`Y`W]Y`X`h`c`Y`b[`U[`Y`]b`h`Y`Z]W]!`h`c!`Z]W]W`W`c`b]h]U`W]h]h]a`Y`h`f`c`i`[`\\`c`V`g`Y`f]`U]h]c]b`z`X]g]W`gg]c]b`UbX`X`Y`V`U`h`r`"

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7 f]h]WU`UbU`mg]g`	&\$!	%+#\$+#&\$&\$'\$. \$\$'DA	%ž(
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8YHU]`g.

Gi a a Uf]gY`UbX`Wta dUfY`hY`ghfYb[hlg`UbX`k YU_bYggYg`cZ&`hYcf]Yg`cZWYUhg]]hm`

K f]hYb`ZYXVUW`"

5ggYgga Ybhg`k]`VY`a Uf_YX`U[U]bghU`[f]X`]gh]b[`hY`UggYgga YbhW]hYf]U

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

Gi a a Uf]gY`UbX`Wta dUfY`hY`ghfYb[hlg`UbX`k YU_bYggYg`cZ&`hYcf]Yg`cZWYUhg]]hm`

7 f]hYf]U`Zcf`UggYgga Ybh

a Uf_	W]hYf]U
<8	<ul style="list-style-type: none"> 8Ya cbghfUHŸg`U`][\`migd\]gh]WUHYX`i bXYfghUbX]b[`cZhY`a cXYgž`WX`UfUWŸf`UbX`Y`Ya Ybhg`cZj Uf]ci g`hYcf]Yg`cZWYUhg]]hm`Ufngž`UbX`g\`ck`WUgYg`hY`_`bck`YX[Yg`UW`ei]fYX`Xi f]b[`hY`W`ei fgY`"9j]XYbWŸg`ghfcb[`UV]]]hmtc`W]h]WU`mUggYgg`YI Ua d`Yg`cZUfng`fYgYUfW`U[U]bghYI Ua d`Yg`cZVYghdfUW]VW`UbX`]bbcj U]h]cb`"8Ya cbghfUHŸg`hY`i gY`cZUddfcd]UHY`fYgYUfW`fYgci fW`g`"J Yfmk Y`k f]hYb`UbX`fYZYfYbW`X"
8	<ul style="list-style-type: none"> 8Ya cbghfUHŸg`U`gcd\]gh]WUHYX`i bXYfghUbX]b[`cZhY`a cXYgž`WX`UfUWŸf`UbX`Y`Ya Ybhg`cZj Uf]ci g`hYcf]Yg`cZWYUhg]]hm`Ufngž`UbX`g\`ck`WUgYg`hY`_`bck`YX[Yg`UW`ei]fYX`Xi f]b[`hY`W`ei fgY`"9j]XYbWŸg`hY`UV]]]hmtc`W]h]WU`mUggYgg`YI Ua d`Yg`cZUfng`



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- 8Ya cbghfUhg'U'\][\`migd\]ghWUHX'i bXYfghUbX]b[`cZHY
a cXYgžWUfUWf'UbX'Y'Ya YbHg'cZj Uf]ci g'hYcf]Yg'cZWFYUhj]m
UfHgž'UbX'g\ck WUgYg'hY' _bck `YX[Yg'UWēi]fYX'Xi f]b['hY
Wēi fgY"9j]XYbW'g'ghcb['UV']mhc'Wf]hW'`mUggYgg'YI Ua d'Yg
cZUfHg'fYgYUfW' U[U]bghYI Ua d'Yg'cZVYghdfUWf]W'UbX

8YHJ]g.

YI Ua d`Yg:cZVYghdfUW`UbX`]bbcj Uhcb"

Hi fb]hb`gYhb[. H\]g`Ugg][ba Ybh]g`gi Va]hX`h`fci [\ `Hi fb]hb`UbX`gh XYbhg`Xc`bchgYY`Hi fb]hb`g]a]Uf]mfYdcfrg"

5 hYbXUbW F Yei]fYa Ybhg

Gh XYbhg UfY gfcfb[mYbWci fU[YX'hc UHhYbX'U''WUggYg'UbX'fYj]Yk ''YWhi fY'fYWc fX]b[g"

7 ci fgY'GWXYXi `Y

[J \]Yk WUgg'ha YhUVY](#)

H]a YhUV`Y`

8UhY	HmdY	7cbhYbh
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K YY_% '%>i bY!') '>i bY	GYa]bUf	G5A D@9'7CI F G9'G7 <98I @9!'H67 'K YY_% K YY_%'F YgYUfW']b'h.Y'7 fYUhj Y'5fhg-'k cf_]b[k]h' UfhUbX'Ufh]ghg'fWUgY'ghi X]YgZ'Yh]WgZ XYWc'cb]nUhc]cbZ'dfc'cWc'gZ'Wc''UVcfUhc]cbE K YY_ '&H\Y'7 fYUhj Y'DfcW'gg-']bhYfa YX]U'a cXY'g fDcYh]Wg'UbX'Wc'a dcg]h]cbZ'a UHf]U'g'UbX'a YX]U']mZ Wc[b]hj Y'hYcf]Yg'cZWYUhj]mE K YY_' ' : cfa U'5bU'mg]g'fa cXYfb]ga Zghfi W'i fU']ga Z Wc]bW'dh U']ga E K YY_ ('H\Y'5fh]ghfUi hYi f'hYcfmZ'YI dfYgg]cbZ gi V'YW]j]mZ'V]c[fUd\nE K YY_) '9a d]f]W]'A Yh'cXg'fYI dYf]a YbhgZ YI dYf]YbW'Z'k cf_]b['k]h' XUHU K YY_ '* '<]ghc'fmUbX'7 cb]hYI h]f]bhYfd'fYUhc]cbZ'W'hi fYZ [YbXYfZ'WYUhj Y'Wc'a a i b]h]YgZ'WUbc]bgE K YY_ '+'H\Y'5fh'9I dYf]YbW'f'hYcf]Yg'cZ gdYWUhc'fg\]dZ'UZYW'Z'd\Ybca Ybc'c[mZ'YU'h'UbX k Y''VY]b[E K YY_ ; '5fh'UbX'@]Z'fD'YfZ'fa UbW'UbX'hY Yj YfmXUmZ'X][]fU'h'Y'W'bc'c[]YgZ'bYk 'a UHf]U']ga E K YY_ '- '7 fYUhj]m]UbX'DYXU[c[m]fa cXY'g'cZ hfU]b]b[Z'h'Y'W'b]ei YZ'h'Y'UfW]j YE K YY_ '%\$'7 fYUhj]m]Uh@Uf[Y'fUfh'UbX'UW]j]ga Z dc']h]WgZ'gc]WU'Wc'a a i b]h]YgE

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

5j U]UV`Y`cb`A ccX`Y

F YWca a YbXYX`F Ygci fWg

5j U]UV`Y`cb`A ccX`Y

7ci fgY`9j U`i Uh]cb`UbX`8Yj Y`cda Ybh

Gh XYb]g`k`j``\Uj Y`h`Y`cddcfh b]m]tc`ZYXVUW`h`fci [\`A m9l dYf]YbW`Vi hU`gc`U`[fci d`ZYXVUW`gYgg]cb
Ug`h`g`]g`h`Y`Z]fgh]a Y`]h`Ug`fi b"

Gi Va]gg]cb`cZ5ggYgga YbhiHUg_g

Hi fb]h]b`Gi Va]gg]cb

Ʒmci`YbWci bHYf`U`dfcV`Ya`k` \Yb`UH`Ya` dh]b[`hc`gi`Va`]hmc`i`f`Ugg][`ba`Ybhi`h`fci`[`\`Hi`fb]h]b`z`d`Y`Ug`Y`
HY`Yd`l`cb`Y`9I`HY`fb`U`Gi`ddc`fh`cb`-`,`)`"``"``%`cf`Ya`U]`h`Ya`i`cb`YI`HY`fb`U`HY`hgi`ddc`fh`4`i`bgk`"YXi`"Ui`"Gi`ddc`fh`
l`ci`fg`UfY`,`.\$\$Ua`-`-%\$.\$\$da`i`cb`k`YY`XUmg`UbX`-`.\$\$Ua`-`).\$\$da`i`cb`k`YY`YbXg`f`l`*)`XUmg`U`m`Y`Uf`l`"Ʒmci`
UfY`i`bUV`Y`hc`gi`Va`]hmc`i`f`Ugg][`ba`Ybhi`Xi`Y`hc`U`Z`Ji`h`k`]h`Hi`fb]h]b`mci`i`a`Um`Udd`m`Z`f`Ub`YI`HY`bg]cb`z`Vi`hmc`i`
a`i`gh`f`Y`h]b`mci`f`h]W`Y`hbi`a`VY`f`Z`ca`9I`HY`fb`U`Gi`ddc`fh`f`U`cb[`k`]h`Ub`m`c`h`Y`f`f`Y`Y`Ub`h`X`c`W`a`Y`b`h`g`L`hc`
]b`Wi`XY`Ug`Y`j`]X`Y`b`W`hc`gi`ddc`fh`mci`f`YI`HY`bg]cb`Udd`]W`h]cb`"Ʒmci`Ya`U]`9I`HY`fb`U`Gi`ddc`fh`mci`k`]`
Ui`hc`a`U`h]W`m`f`Y`W`]j`Y`U`h]W`Y`hbi`a`VY`f`z`Vi`h]Z`mci`HY`Yd`l`cb`Y`mci`k`]`b`Y`Y`X`hc`gd`Y`W`Z]W`m`Ug`_`Z`f`cb`Y`"
Hi`fb]h]b`U`gc`d`fc`j`]X`Y`gi`d`X`U`h`Y`g`cb`h`Y`]f`g`m`g`h`Ya`i`g`h`U`h`g`cb`H`k`]h`Y`f`"

;`Yb`Y`f`U`m`z`Ugg`Y`gga`Yb`hi`U`g`_`g`a`i`gh`V`Y`gi`Va`]h`Y`X`Y`Y`W`f`cb]W`m`j`]U`Y`]h`Y`f`Hi`fb]h]b`cf`U`A`cc`X`Y`
Ugg][`ba`Yb`h`i`h`]b`g`h`U`b`W`g`k` \Y`f`Y`h`l`g`]g`b`c`h`d`c`g`g]V`Y`z`]h`k`]`V`Y`g`h`U`h`X`cb`mci`f`W`ci`fg`Y`g`A`cc`X`Y`g`]h`k`]h`
U`h`Y`fb`U`h]`Y`gi`Va`]gg]cb`X`Y`h]g`"

:`cf`]b`Z`fa`U`h]cb`cb`l`ck`hc`gi`Va`]h`Ugg][`ba`Yb`h`g`cb`]b`Y`j`]U`A`cc`X`Y`.\`h`d`g`#`g`h`X`Y`b`h`i`bgk`"YXi`"Ui`#`ck`!
gi`Va`]h`Ugg][`ba`Yb`h`a`cc`X`Y`"

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'Wcdmf][\hž' BGK 'Gh XYbh7cXY'cZ7cbXi W'Ubx'5Ww'dhUV'Y'I gY'cZ I BGK '⇒H'F Ygci fW'g'Dc`]Wn
- VY'Uk UfY'cZh'Y'ghUbxUfXg'cZVY\Uj]ci f'YI dYW'X'cZYj Yfmcby'jb'h'Y'I BGK 'Wca a i b]m
- `cWJh'gYfj]Wg'UbX'jbZcfa Uhcb'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 ""

[\hhd.##ji V'YW'i \]XYg" \]VfUfm'i bgk "YXi "Ui #' \]gY#JVci h' \]gY](#)

5 WUXYa]WbZcfa Uh]cb

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

- fYei Ygh]Zcf`YI H`bg]cb/
- `Uh`gi Va]gg]cbg`[i]XY`]bYg/
- fYj]Yk `cZa Uf_g/
- I B GK `<YU`h`UbX`GUZY`midc`]WYg/
- YI Ua]bUh]cb`dfcW`Xi fYg/
- gdYW]U`W`bg]XYfUh]cb`]b`hY`Yj YbhcZ]`bYgg`cf`a]gUXj Ybh fY/
- gh XYbhYei]mUbX`X]gUV`]m/
- UbX`c`hYf`YggYbh]U`UWUXYa]W]bZcfa Uh]cbz`gYY