



ARTS1450

hfcXi Wc fm7 \]bYgY '5 'Zcf' Bcb!6UW_[fci bX'Gh XYbhtg

GYa YghYf'C bY''##'&\$%

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

5 WUXYa JWbZcfa Uh]cb`

: cf`YggYbh]U`gh XYbh]bZcfa Uh]cb`fY`Uh]b[`hc.`fYei Ygrg`Zcf`YI hYbg]cb/fYj]Yk `cZa Uf_g/cVWw dUh]cbU`\\YU`h
UbX`gUZ`hm`YI Ua]bUh]cb`dfcW`Xi fYg/gdYW]U`Wtbg]XYfUh]cb`]b`hY`Yj Ybhcz]`bYgg`cf`a]gUXj Ybh fY/

7ci fgY'8YHJ]`g

7fYX]hDc]bHg`*`

Gi a a UfmicZhY'7ci fgY

Gi VYWh5fYU.7\]bYgY'Gh X]Yg

H\]g`]g`Ub`]b]fcXi`Wc`fmWci`fgY`]b`A`cXYfb`G`H`UbX`UfX`7`\]bYgY`Ub[i U[Y`fA`UbX`Uf]b`E`Z`f`bc`b!`VUW`[`fci`bX`gdYU`_`Yfg`"`H\Y`Wci`fgY`k`]`ghUfhk`]h`VUg]W`Wca`dcbYbHg`cZ7`\]bYgY`Ub[i U[Y.`hY`b[`k[`Z`UbX`W`UfUW`Yfg`#`k`]`HYUW`mci`ck`hY`7`\]bYgY`Ub[i U[Y`k`cf`g`Vch`[`fUa`a`Uh]W`m`UbX`]b`gc`W]c!`W`h`fU`Wc`bHY`hg`gc`h`Uh`mci`ghUfhc`XYj`Y`cd`mci`f`]b[i]gh]WUbX`Wca`a`i`b]WU]h]Y`Wca`dYH`b`W`g`"`H\Y`Zci`f`Ub[i U[Y`g_]`g`!`@]ghYb]b[Z`GdYU_]b[Z`FYUX]b[Z`UbX`k`f]h]b[`!`UfY`]bHY[fUH`X`h`fci`[\`ci`h`hY`Wci`fgY`"5`W`h`fU`Uk`UfYbYgg`]g`U`gc`Vi`]h]b]c`hY`Wci`fgY`"H\fci`[\`Ub[i U[Y`gh`Xm`mci`k`]`XYj`Y`cd`Ub]b`Z`fa`YX`i`bXYfg]UbX]b[`cZ`7`\]bYgY`]b[i]gh]WVY\Uj`]ci`fZ`gc`W]Y`m`UbX`W`h`fY`"

H\]g`Wci`fgY`]g`U`VY[]bbYfg!`Yj`Y`Ub[i U[Y`Wci`fgY`"5`gh`XYbHg`k`c`\Uj`Y`\UX`gca`Y`Yi`dYf]YbW`k`]h`hY`Ub[i U[Y`Z`Y]h`Y`f`Ug`U`\Yf]U[Y`Ub[i U[Y`cf`h`fci`[\`d`fY]`]ci`g`]b]g]fi`W]cbZ`a`i`gh]Z`]b`hY`d`UW`a`Y`bh`ei`Y`gh]c`bbU]fY`Uj`U]UV`Y`Uh`\hdg`#`A`U`"UfHg`"i`bgk`"YXi`"Ui`#`gh`XYbHg`#`Wci`fgYg`#`Ub[i U[Y!`d`UW`a`Y`bHg`"Mci`k`]`bchVY`d`Yfa`]hY`X`h`c`Y`bfc`]b`U`Ub[i U[Y`Wci`fgY`h`Uh]g`h`c`c`Y`Ugm`Z`f`mci`"Z`h`]g`c`W`W`fgZ`mci`k`]`VY`f`Yei`Y`gh`X`h`c`W`Ub[Y`mci`f`Y`bfc`a`Y`bh`"

5h`hY`Wc`bWi`g]cb`cZ`h`]g`Wci`fgY`h`Y`gh`XYbhk`]`VY`UV`Y`h`c`

- % "8Ya`cbg]fUH`Y`U`gci`bX`_`bck`YX[Y`cZd]bm]b`UbX`W`UfUW`YfgZ`dfc`bci`bW]b[`k`cfXgZ`UbX`k`f]h]b[W`UfUW`Yfg`k`]h`Wc`bZ`XYbW`"
- &"GdYU`_`k`]h`fYUgcbUV`m`UW`W`fUH`d`fcbi`bW]U]h]cb`UbX`]b]c`bU]h]cb`i`g]b[`]g]a`d`Y`g`Y`b`H`b`W`d`UH`Y`fbg`k`]h`]b`h`c`d]Wg`fY`UH`X`h`c`gi`fj`]j`U`!`Yj`Y`Ub[i U[Y`i`gY`"
- ' "5dd`m`Wca`a`i`b]WU]h]Y`g_]`g`UbX`g]h`UH`Y`]Yg`h`c`Wca`d`Y`H`j`Uf]ci`g`Ub[i U[Y`h`Ug`_`g`]b`]ghYb]b[Z`gdYU_]b[Z`fYUX]b[`UbX`k`f]h]b["
- ("5f]h]W`UH`Y`Ub`Uk`UfYbYgg`UbX`i`bXYfg]UbX]b[`cZ`UgdY`Wg`cZ7`\]bYgY`]b[i]gh]WVY\Uj`]cfZ`gc`W]Y`m`UbX`W`h`fY`"

HYUW]b[`G]hUH`Y`]Yg`

K`Y`VY`]Yj`Y`Ub[i U[Y`]g`VYghUWci`]fYX`]b`U`\c`]gh]WUbX`]b]hY`fUW]j`Y`Z]g\]cbZ`gc`U`"hY`Zci`f`Ub[i U[Y`g_]`g`!`]ghYb]b[Z`gdYU_]b[Z`fYUX]b[Z`UbX`k`f]h]b[`!`Ug`k`Y`"Ug`U`W`h`fU`Wca`dcbYbh`UfY`]bHY[fUH`X`h`fci`[\`ci`h`h]g`Wci`fgY`Z`H\Y`Ya`d`Ug]g`]g`cb`hY`h`f`Ub]g`Z`fa`U]h]cb`cZ`mci`f`]b[i]gh]Wg_]`g`]b]c`UW]h]Y`Wca`a`i`b]WU]h]cb`"GdYW]Z]W`]b]g]fi`W]h]cbg`UbX`d`fUW]W`g`d`Y`f]h]b`Y`bh]c`Y`UW`g`_]`XYj`Y`cda`Y`bh`UfY`k`cj`Y`b]b]c`hY`Y`Uf]b]b[`UW]h]h]Y`gZ`U`][`bYX`k`]h`hY`UggY`gga`Y`bhgZ`hU_]b[`]b]c`UW`Wci`bh`h`Uh`h]g`Wci`fgY`]g`Z`f`bc`b!`VUW`[`fci`bX`VY[]bbYfg`"Hc`UW`Y]j`Y`hY`XYg]fYX`Y`ZY`WZ`Y`Z`c`f`h`UbX`W`UfY`Z`d`Ubb]b[\Uj`Y`VY`b`a`UX`h`c`U`][`b`ci`f`h`UW`]b[`ghUH`Y`]YgZ`a`Y`h`c`Xg`UbX`g]h]f`i`W`h`fY`k`]h`hY`U]a`g`UbX`Y`Uf]b]b[`ci`h`Wca`Yg`cZ`hY`Wci`fgY`"H\Y`Y`W`h`fY`gYf]Yg`Ug`Ub`cj`Y`fU`"b]h]c`Xi`W]h]cb`h`c`Vch`h`Ub[i U[Y`UbX`W`h`fU`UgdY`Wg`fY`Yj`Ub]h]c`Y`UW`W`Ud`h`f`"H\Y`h`h`c`f]U`g`Z`c`W`g`cb`"hY`]bHY[fUH`X`"Ub[i U[Y`g_]`g`h`fci`[\`U`j`Uf]Y`h`ic`ZYI`Y`fW]gYg`"5`"hY`UggY`gga`Y`bhgZ`]bWi`X]b[`WUgg`"

5ggYgga Ybh

Q-YfY'mci 'WUbc'i h]bY'UbmifY'Yj Ubh]bZcfa Uhc]b'hUhk Ug'bc]b]bWl XYX'j]b'5 #A G'Vi ha Umidfcj Y'\Y'dZ'`Zcf mci f'gh XYbhg": cfYl Ua d'Yz'mci 'a][\hdfcj]XY'XYHJ]g'cb'hY'fYZfYbW]b['gmghYa z'']b_g'hc'dfYj]ci g gh XYbhYl Ya d'Ufg'cf'hY'XYg][bUH'X'k YY_]b'hY'Wci fgY'hUhmci 'k]'X]gW gg'hY'UggYgga YbhU'h'Yb[h" #a dcfUbh'mz'h]g'gYW]cb:]g'Ub'UfYU'Zcf'mci 'hc'dfcj]XY'j]bZcfa Uhc]b'hUhxYg'bc]b[c'h'fci [\ 'hY'Uddfcj YX [cj YfbUbW'g'fhi W'h fY"Q

5bmchYf'fY'Yj Ubh]bZcfa Uhc]b'k]'VY'dfcj]XYX'cb'hY'Wci fgY'a ccX'Y"

5ggYgga YbhHUg_g`

5ggYgga YbhHUg_	K Y][\h	8i Y'8UH'	Gh XYbh@YUfb]b[Ci hW'a Yg'5ggYggYX
; fci d']bhYfUW]j Y'dfc'YWh	%)	' %#\$) #&\$% '\$(. \$\$'DA	%z&z(
:]bU'hYgh	&\$	Xi f]b['hY'&! \f'h hc]f]U'']b K YY_'%&	%z z(
A]X'hYfa 'hYgh	&\$	8i f]b['hY'&! \f'h hc]f]U'']b K YY_'+	%z
7 cb]bi ci g'UggYgga Ybhg`	()	j Uf]ci g	%z&z

5ggYgga Ybh8YHJ]g`

5ggYgga Ybh% ; fci d']bhYfUW]j Y'dfc'YWh

GHUfhXUH'. Bch5dd`]WUV'Y

@Yb[h. %) 'a]bi hYg'Zcf'dfYgYbhU]cb/ ') \$\$!* \$\$'WUfUWYfg'Zcf'hY'gW]dh

8YHJ]g. 'H\]g'g'U' [fci d'dfc'YWh]bWl X]b['U'\UbX!k f]hY'b'gW]dhcZ) \$\$!* \$\$'k cfXg'f) | E'UbX'WUgg dfYgYbhU]cb]b'hY'Zcfa 'cZa]b]! XfUa U'Zcf'%) 'a]bi hYg'dYf' [fci d'f%\$| E''H\Y'dfYgYbhU]cb]g'UggYggYX cb]bX]j]Xi U'VUg]g'k \]Y'hY'k f]hY'b'gW]dhfYW]j Yg'cbY'a Uf'_': YYXVUW_j]U'fi Vf]WUbx']b!WUgg'X]gW'gg]cb

5XX]h]cbU'XYHJ]g.

5XX]h]cbU'UggYgga Ybh]bZcfa Uhc]b'k]'VY'dfcj]XYX'cb'hY'Wci fgY'a ccX'Y"

5ggYgga Ybh&. :]bU'hYgh

GHUfhXUH'. Bch5dd`]WUV'Y

8YHJ]g.

Gi Va]gg]cb`cZ5ggYgga YbhHUg_g

Gh XYbng`UfY`YI dYW`X`hc`di h`h`Y]f`bUa Yg`UbX`gh XYbhbi a VYfg`cb`Yj YfmdU[Y`cZ`h`Y]f`Ugg][ba Ybhg"

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

≠mci`YbWci bhYf`U`dfcV`Ya`k`Yb`U`h`Ya`dh]b[`hc`gi Va]hmcif`Ugg][ba Ybh`h`fci [`h`Hi`fb]h]b`z`d`YUgY
h`Y`d`cb`Y`9I`h`fb`U`Gi`ddcfh`cb`-`'`,`)`''`'`%cf`Ya`U]`h`Ya`cb`[YI`h`fb`U`h`h`gi`ddcfh`i`bgk`"YXi`"Ui`"Gi`ddcfh](#)

f`G][b]Z]W]b]h]m]U]Z]Y]W]h]m]i] f]d]Y]f]Z]c]f]a] U]b]W]W]]b]`U]g]g]Y]g]g]U]V]`Y]`k] c]f]_]Z]V]Y]`]h]U]`Z]c]f]a] U]`Y]b]X]!]c]Z]g]Y]a] Y]g]h]Y]f]`Y]I] U]a]]b]U]h]c]b]Z]U] W]U]g]g]`h]Y]g]h]Z]U]`U]V]c]f]U]h]c]f]m]h]Y]g]h]Z]U]`g]Y]a]]b]U]f]d]f]Y]g]Y]b]h]U]h]c]b]`c]f]U]b]m]c]h]Y]f]`Z]c]f]a] `c]Z]U]g]g]Y]g]g]a] Y]b]h]

: c]f]`Z] f]h]Y]f]`X]Y]h]U]`g]`]b]`f]Y]`U]h]c]b]`h]c]`G]d]Y]W]U]`7]c]b]g]X]Y]f]U]h]c]b]`]b]W]i] X]b] [``K] \]Y]b]`h]c]`5]d]d]`m]Z]``<]c]k]`h]c]`5]d]d]`m]`U]b]X] `G]i] d]d]c]f]h]b] [`8]c]W]a] Y]b]h]U]h]c]b]``d]`Y]U]g]Y]`f]Y]Z]f]`h]c]`h]Y]`G]d]Y]W]U]`7]c]b]g]X]Y]f]U]h]c]b]`k] Y]V]g]h]Y]`.

[\\]h\]c\]g.\]#\]g\]h\] X\]Y\]b\]h\]i\] b\]g\]k\] "Y\]X\]i\] "U\]i\] #\]g\]d\]Y\]W\]U\]`!\]W\]c\]b\]g\]X\]Y\]f\]U\]h\]c\]b\]](#)

5 WUXYa]W<c bYghmUbX 'D`U[]Uf]ga

D`U[]Uf]ga]g`i g]b['hY`k cfXg`cf]XYUg`cZchYfg`UbX`dfYgYbh]b['hYa`Ug`mci f`ck b" #WUb`hU`Y`a Ubm
Zcfa gZ`Zca`XY`]VYfUHy`WXYU]b['hc`UWV]XYbhU`mW`dm]b[`Zca`U`gci fW`k]h`ci hUW`bck`YX[Ya`Ybh`

I BGK` [fci dg`d`U[]Uf]ga`]bhc`hY`Zc`ck]b[`WUHy` [cf]Yg.

7cdm]b[.`i`g]b['hY`gUa`Y`cf`j`Yfmg]a`]Uf`k`cfXg`hc`hY`cf][]bU`hY`hcf`]XYU`k`]h`ci hUW`bck`YX[]b['hY`
gci fW`cf`i`g]b[`ei`chU]cb`a`Uf`g`"H`]g`U`gc`Udd`]Yg`hc`]a`U[YgZ`UfhUbX`XYg][`b`dfc`YWgZ`Ug`k`Y`Ug`
dfYgYbhU]cbg`k` \Yf`gca`YcbY`dfYgYbh`Ubc`hY`f`g`]XYUg`cf`k`cfXg`k`]h`ci hW`YX]h`

#Uddfcdf]UHy`dUfUd`fUg]b[.`W`Ub[]b[`U`Zy`k`cfXg`UbX`d`fUgYg`k` \]Y`a`cghm`fYU]b]b['hY`cf][]bU`
g]f`i`W`fY`UbX`]bZcfa`U]cb`k`]h`ci hUW`bck`YX[Ya`Ybh`"H`]g`U`gc`Udd`]Yg`]b`dfYgYbhU]cbg`k` \Yf`gca`YcbY`
dUfUd`fUgYg`Ubc`hY`f`g`]XYUg`cf`k`cfXg`k`]h`ci hW`YX]h` #U`gc`Udd`]Yg`hc`d`]YW]b[`hc`[Y`hY`f`ei`chYg`UbX`
dUfUd`fUgYg`]bhc`U`bYk`k` \c`Y`Z`k`]h`ci hfY`ZYfYbW]b[`UbX`U`gh`XYbh`g`ck`b`UbU`mg]g`hc`V`f]b['hY`a`U`hY`f]U`
hc`[Y`hY`f`"

7c`i`g]cb.`k`cf_]b[`k`]h`chYfg`Vi`hdUgg]b[`cZ`hY`k`cf_]Ug`U`dYfgcb`g`]bX]j`]Xi`U`k`cf_]7c`i`g]cb`U`gc`
]bW`i`XYg`dfcj`]X]b[`mci`f`k`cf_]hc`Ubc`hY`f`gh`XYbhVY`Zc`fY`hY`Xi`Y`XU`hY`Zc`f`Zc`f`hY`di`fdcgY`cZ`hY`a`
d`U[]Uf]g]b[`Uh`Ubmi]a`Y`Z`dUm]b[`Ubc`hY`f`dYfgcb`hc`dY`Zc`fa`Ub`UW`XYa`]W`hUg`_`Z`ghY`U`]b[`cf`U`W`ei`]f]b[
Ubc`hY`f`dYfgcb`g`UW`XYa`]W`k`cf_]UbX`W`dm]b[`]Z`c`ZYf]b[`hc`W`ca`d`Y`hY`Ubc`hY`f`dYfgcb`g`k`cf_]cf`g`YY_]b[
dUma`YbhZc`f`W`ca`d`Y]b[`UW`XYa`]W`k`cf_]`

#Uddfcdf]UHy`W`hU]cb.`7`]h]b[`gci`fW`g`k` \]W` \Uj`Y`bchV`Y`b`fY`UX`Z`k`]h`ci hUW`bck`YX[]b['hY`"gY`W`bXU`fm`
gci fW`Zca`k` \]W`_`bck`YX[Y`cZ`hY`a` \Ug`V`Y`b`c`V`hU]bYX`"

8i`d`]W`h]cb`f`f`gY`Z`d`U[]Uf]ga` "E`gi`Va`]h]b[`mci`f`ck`b`k`cf_]b`k` \c`Y`cf`]b`dU`f`Z`k` \YfY`]h` \Ug`d`fYj`]ci`g`m`
V`Y`Y`b`d`fY`dU`fY`X`c`f`gi`Va`]hY`X`Zc`f`Ubc`hY`f`UggY`gga`Ybhcf`W`ei`fgY`UhI`BGK`cf`Ubc`hY`f`i`b]j`Yfg]h`"

7c`ffY`W`hY`ZYfYbW]b[`dfU`W`]W`g.

- VYhYf'a UbU[Y'mci f'hja Y

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

7ca di `gcfm

#fi;` fWdSfW 5Z[`WeWFw fTaa] ž@Yj Y`%DUfh%fG]a d`]ZYX`7\UfUWf]fg`J Yfg]cbŁ (h`9X]h]cb"ŁVmHUc!
Wxi b[`Mjc`UbX`M Y\i U`@j žUbX`di V]g\YX`Vm7\Yb[/ Hgi]"ž5j U]UV`Y`Zca `I BGK `6cc_g\cd"

\$fi;` fWdSfW 5Z[`WeWl `adj Taa] ž@Yj Y`%DUfh%fG]a d`]ZYX`7\UfUWf]fg`J Yfg]cbŁ (h`9X]h]cb`VmHUc!
Wxi b[`Mjc`UbX`M Y\i U`@j žUbX`di V]g\YX`Vm7\Yb[/ Hgi]"ž5j U]UV`Y`Zca `I BGK `6cc_g\cd"

F YWca a YbXYX`F Ygci fWg

#fi;` fWdSfW 5Z[`WeW5ZScSUfWdl `adj Taa] ž@Yj Y`%DUfh%fG]a d`]ZYX`7\UfUWf]fg`J Yfg]cbŁVmHUc!Wxi b[
Mjc`UbX`M Y\i U`@j žUbX`di V]g\YX`Vm7\Yb[/ Hgi]"ž5j U]UV`Y`Zca `I BGK `6cc_g\cd"

&ŁU`[ccX!ei U`]m7\]bYgY!9b[`]g\`X]W]cbUfm

`3 5Z[`WeW7` Y`eZ 6 [Uf[a` Sck"Di V`]g\YX`Vm7ca a YfW]U`DfYgg`f6Y]b[Ł"

€6B `+!%\$\$!\$\$\$)' \$!&#` "% , "5j U]UV`Y`Zca `I BGK `6cc_g\cd"Q

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

H\]g`Wci fgY`k]`VY`Zcfa U`mYj U`i UhYX`h]fci [\ `A m9l dYf]YbW"

⇒a U[Y`7fYX]h

GmbYf[]Yg`]b`Gci bX`&\$%*`

7F ⇒CG

7F ⇒CG`Dfcj]Yf`7cXY`.\$\$\$- , ;