



ARTS3095

65 'A YX]U' ðhY fbg\]d

HYfa 'H\ fYY' ##' &\$%-



GWcc ``cZH Y `5 ffg`UbX`A YX]U` ``#`I`BGK ``5 ffg`UbX`GcW]U` ``GWY bWg

7 ci fgY'Cj Yfj]Yk

'GHUZZ'7 cbhUW'i8YHJ`g`

'7 cbj Ybcfg`

B Ua Y	9a Uj`	5j Uj'UVj]m	@cWUjcb	D\cbY
9a a U'>UbY	Ya a U"UbY4 i bgk "YXi "Ui	6mUddc]bha Ybh	%%) ž'@Yj Y`%ž F cVYfh K YVghYf	

GWXcc`7 cbhUW'i bZcfa Uhjcb

Fcca " %&ž'Yj Y`" 'F cVYfhK YVghYf'6i]X]b[

D\cbY. f\$&Ł-' ,) '(,) *

9a Uj]: [gUa 4 i bgk "YXi "Ui](#)

K YVg]hY: [\hfdg.#gUa "Ufmg"i bgk "YXi "Ui](#)

H\Y'GWXcc`cZhY'5fmg'UbX'A YX]U'k ci 'X`_Y'hc'F YgdYWw'`m5W_bck 'YX[Y'hY'HfUX]hcbU`7 i ghcX]Ubgž
hY'6YXY[U'fP Ybg]b[hcb'WJa di gŁž; UX][U'f7]mUbX'5fhi'8Yg][b'7 Ua di gYgŁ'UbX'hY'B [i bbUk U`
dYcd'Y'fBi gLfU]Ub'8YZ'bvW': cfW'5WUXYa m]b'7 UbVYffUŁ'cZhY'UbXg'k \YfY YUW'WJa di g'cZI BGK 'jg
'cWUHYX"

7ci fgY'8YHJ]`g

7fYX]hDc]bHg`*`

Gi a a UfmicZ\hY'7ci fgY

Gi VYWh5fYU.`? WWS[5g`fgdWS`V FWUZ` a`aYk

H\]g`Wci fgY`dfcj]XYg`mci `k]h`Ub`cddcfh b]hmc`i bXYfhU_Y`k cf_!]bhY[fUHx`YUfb]b[`UbX`[U]b`]bXi gHfm
YI dYf]YbW`k]h`U`cgHcf[Ub]gU]cb`WcgY`mfY`UHx`hc`mci f`A U`cf`]b`A YX]Uz`7i` `h`fY`UbX`HYW`bc`c[m`Mci
a UmU`gc`Udd`mhc`k cf`cb`UHfUW`a Ybhc]b`Ub`UWUXYa]WfYgYUfW`dfc`YWhcf`k cf_]b`Ub`YX]hc]f]U`fc`Y`Zc`f`Ub
UWUXYa]W`ci fbU`"X`YU`n`z`mci `k]`i bXYfhU_Y`Ub`]bhYfbg\]d`Uz`hf`mci `Uj`Y`W`a d`Y`H`X`%)`m`U`fg`c`Z`Z`!`h`a`Y
gh`Xm`f`c`f`Yei]j`U`Y`b`h`Ub`X`W`a d`Y`H`X`U`a]b]a`i`a`c`Z`%`I`C`7`]b`h`Y`A`U`cf`"5`h`h`Y`Y`b`X`c`Z`h`Y`]bhYfbg\]d`mci
k]`d`f`c`j]X`Y`U`gi`a`a`U`h`j`Y`f`Y`d`c`f`h`c`Z`mci`f`Y`I`d`Y`f]Y`b`W`g`Ub`X`k`cf`_`Y`I`U`a`d`Y`g`W`a`d`Y`H`X`X`i`f]b[`h`Y`]bhYfbg\]d`"

H\Y`]bhYfbg\]d`f`Yei]fYg`U`hc`U`W`a`a`]h`a`Y`b`h`c`Z`%`\$`!`%`\$`\\ci`fg`c`Z`k`cf`_`k]h`U`cgHcf[Ub]gU]cb`UbX`a`Um
bcfa`U`m`V`Y`h`U`_`Y`b`]b`Z`f`g`h`z`g`Y`W`b`X`c`f`g`i`a`a`Y`f`g`Y`a`Y`g`h`Y`f`"b`h`Y`fbg\]d`c`d`d`c`f`h`b`]h`Y`g`U`f`Y`U`X`j`Y`f`h`g`Y`X`j`]U`h`Y
G`W`c`c`c`Z`h`Y`5`f`f`g`Ub`X`A`Y`X]U`b`h`Y`fbg\]d`B`Y`k`g`Y`H`Y`f`5`h`Y`fb`U`h`j`Y`m`mci`a`Um`U`d`d`f`c`U`W`U`f`Y`Y`j`Ub`h
cf[Ub]gU]cb`hc`U`d`d`m`Z`c`f`Ub`]bhYfbg\]d`"D`f`c`f`hc`g`Y`Y`_]b[`Ub`]bhYfbg\]d`z`mci`g`\\ci`X`U`H`Y`b`X`Ub`]bhYfbg\]d`
]b`Z`c`f`a`U`h`c`b`g`Y`g`g`c`b`f`i`b`V`m`h`Y`G`W`c`c`c`Z`h`Y`5`f`f`g`Ub`X`A`Y`X]U`"

Hc`V`Y`Y`][]V`Y`Z`c`f`h`g`W`ci fgY`z`mci`a`i`gh`U`j`Y`U`a`]b]a`i`a`K`5`A`c`Z`*)`"

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

%`\\U`j`Y`[U]b`Y`X`Y`I`d`Y`f]Y`b`W`c`Z`]b`X`i`g`H`f`m`d`f`c`W`g`g`Y`g`U`b`X`d`f`U`W`]W`g
&`"U`d`d`m`h`Y`c`f`Y`h`W`W`W`c`b`W`d`f`g`U`b`X`d`f`U`W`]W`g`_]`g`[U]b`Y`X`]b`h`Y`d`f`c[f`U`a`hc`f`Y`U`!`k`c`f`X`W`c`b`h`Y`I`h`g
'`"\\U`j`Y`Y`b`\\U`b`W`X`h`Y`f`W`d`U`W`]m`Z`c`f`]b`X`Y`d`Y`b`X`Y`b`h`Y`b[U[Y`a`Y`b`h`k`]h`]b`X`i`g`H`f`m`d`f`c`j]X`Y`f`g`"

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

H\]g`Wci fgY`\\U`g`bc`Z`c`f`a`U`h`Y`U`W\]b[`W`a`d`c`b`Y`b`h`"

5ggYgga Ybh

H\]g'gi VYWi]g'i b[fUXYX'gc'U'dUgg']g'XYdYbXYbhcb'GUh]gZUWc'fmfGMŁ'cf'I' bgU]gZUWc'fmfI' @Ł]b'a YYh]b[hY'Wci fgY'fYei]fYa Ybhg''5b'GM[fUXY'k]''bchUZYWmci f'k Y][\hYX'Uj YfU[Y'a Uf_'fK 5A Ł'Vi hU': @[fUXY k]''

7ci fgY'fYei]fYa Ybhg]bWl XY.

- 7ca d'Yh]cb'cZU'a]b]a i a 'cZ%\$\$'\ci fg'cZd'UW'a Ybh
- Gi Va]gg]cbg'cZUggYgga YbhUg_g'%/ '&'XYa cbg]fU]b['U'gYf]ci g'U]hYa dhlc'Ubgk Yf'hY'fUg_ fYei]fYa Ybhg

) \$\$'k cfXg'Vi ha Uma U_Y'i d'ia cfY'cZ\Y'Wca V]bYX'hcU'icZ%) \$\$!&) \$\$'k cfX''ja]hZcf'Vch\ 'UggYgga Ybh
Wca dcbYbthg"; fUX]b['k]''VY'GUhgZUWc fmi# bgUhgZUWc fmiUbX'gca Y'gi a a Uhj] Y'ZYXVUW_k]''VY'dfcj]XYX"

5XX]h]cbU'XYhU]g.

H\]g'gi VYWh]g'i b[fUXYX'gc 'U'dUgg']g'XYdYbXYbhcb'GUhgZUWc fmi fGM'c'f'l' bgUhgZUWc fmi f] @]'b'a YYh]b[
hY'Wci fgY'fYei]fYa Ybthg''5b'GM[fUXY'k]''bchUZYWhmci f'k Y][\hYX'Uj YfU[Y'a Uf_'fK 5A k'Vi hU': @[fUXY
k]''

7ci fgY'fYei]fYa Ybthg]bWl XY.

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

H\YfY`UfY`bc`dfYgWf]VYX`fYgci fWg`Zcf`h\]g`Wci fgY"

F YWca a YbXYX`F Ygci fWg

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

K Y`fYgdcX`hc`ZYXVUW`fYWf]j YX`j]U`X]fYWhYa U]`hc`h\Y`7ci fgY`7cbj Ybcf`UbX`h\Y`K`@| b]z`UbX`
]bZcf`a Uh]cb`dfcj]XYX`]b`h\Y`gh`XYbhUbX`\cghZYXVUW`Zcf`a`g"

K Y`\cdY`mci`Yb`emci`f`]bhYfbg\]d`

Gi Va]gg]cb`cZ5ggYgga YbhHUg_g

Gi Va]gg]cb`cZ5ggYgga YbhHUg_g

Hi fb]hb`Gi Va]gg]cb

Ʒmci`YbWci`bhYf`U`dfcV`Ya`k`Yb`U`H`Ya`dh]b[`hc`gi`Va`]hmc`i`f`Ugg][`ba`Ybh`h`fci`[`\`Hi`fb]hb`z`d`YUgY`
H`Y`d`l`cb`Y`9I`H`f`b`U`Gi`ddcfh`cb`-`,`)``'`'`'`%`cf`Ya`U]`h`Ya`cb`YI`H`f`b`U`H`f`gi`ddcfh`4`i`bgk`"YXi`"Ui`"Gi`ddcfh`
`l`ci`fg`UfY`,`.\$\$Ua`-`-%\$.\$\$da`cb`k`YY`XUmg`UbX`-`.\$\$Ua`-`i`.\$\$da`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`Ybh`Xi`Y`hc`U`Z`U`h`k`]h`Hi`fb]hb`mci`a`Um`Udd`m`Z`f`Ub`YI`H`f`bg]cb`z`Vi`hmc`i`
a`i`gh`f`Y`h]b`mci`f`h]W`Y`h`bi`a`VY`f`Z`ca`9I`H`f`b`U`Gi`ddcfh`f`U`cb[`k`]h`Ub`m`c`h`Y`f`f`Y`j`Ub`h`X`c`W`a`Y`b`h`g`l`hc`
]b`W`i`X`Y`U`g`Y`j`]X`Y`b`W`hc`gi`ddcfh`mci`f`YI`H`f`bg]cb`Udd`]W`h]cb"Ʒmci`Ya`U]`9I`H`f`b`U`Gi`ddcfh`mci`k`]`
Ui`h`ca`U`h]W`m`f`Y`W`]j`Y`U`h]W`Y`h`bi`a`VY`f`z`Vi`h]Z`mci`H`Y`d`l`cb`Y`mci`k`]`b`Y`Y`X`hc`gd`Y`W`]W`m`U`g`_`Z`f`cb`Y`
Hi`fb]hb`U`gc`d`fc`j`]X`Y`g`i`d`X`U`H`Y`g`cb`h`Y`j`f`g`m`g`h`Ya`g`h`U`h`g`cb`H`k`]h`Y`f`"

;`Yb`Y`f`U`m`z`Ugg`Y`gga`Y`bh`h`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]hb`cf`U`A`cc`X`Y`
Ugg][`ba`Y`b`h`h`b`]b`g`h`U`b`W`g`k`Y`f`Y`h`l`g`]g`b`c`h`i`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`f`b`U`h]j`Y`gi`Va`]gg]cb`X`Y`h]g`"

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

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" `hWUb`hU`Y`a Ubm
Zcfa gž`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`hYI 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[YgžUfhUbX`XYg][b`dfc`YWgžUg`k Y`Ug
dfYgYbhU]cbg`k \YfY`gca YcbY`dfYgYbh]g`UbchYf`g`]XYUg`cf`k cfXg`k]h`ci hWYX]h`

hUddfcdf]UHY`dUfUd`fUg]b[.`7`Ub[]b[`U`ZYk `k cfXg`UbX`d`fUgYg`k \]Y`a cghmifYU]b]b[`hY`cf][]bU`
ghfi W`i fY`UbX`#`f`dfc[fYgg]cb`cZ]XYUg`cZ`hY`cf][]bU`ž`UbX`]bZcfa U]cb`k]h`ci hUW_bck`YX[Ya Ybh`H\]g`U`gc
Udd`]Yg`]b`dfYgYbhU]cbg`k \YfY`gca YcbY`dUfUd`fUgYg`UbchYf`g`]XYUg`cf`k cfXg`k]h`ci hWYX]hU`bX`hc
d]YW]b[`hc[YhYf`ei chYg`UbX`dUfUd`fUgYg`]bhc`U`bYk `k \c`Yž`k]h`ci hUddfcdf]UHY`fYZYfYbW]b["

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
]bWi XYg`dfcj]X]b[`mci f`k cf_]hc`UbchYf`gh`XYbhVYZc`fY`hY`Xi Y`XUHYž`cf`Zc`f`hY`di fdcgY`cZ`hY`a

- 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'5W'W'dhUV'Y'I gY'cZ I BGK '⇒H'F'Ygci f'W'g'Dc`]W'h
- VY'Uk UfY'cZ'Y'ghUbxUfXg'cZVY\Uj]ci f'YI dY'W'X'cZYj Yfmcby']b'h'Y'I BGK 'W'a a i b]m
- 'cW'W'h'gYfj]W'g'UbX']bZ'fa U]cb'UVci hl BGK 'UbX'I BGK '@]VfUfm

Gca Y'cZ'Y'gY'UfY'Ug'k]''VY'ZJa]]Uf'hc'mci ž'c'h'Y'fg'k]''VY'bYk "'; U]b]b['U'gc`]X'i bXYfghUbx]b['cZU''h'Y fY'U'Y'X'UgdY'W'g'cZ9@-G9'k]''\Y'd'mci 'a U_Y'h'Y'a cghcZmci f'gh X]Yg'Uhl BGK ""

[\h'hd.##gi V'Y'W'i \]X'Y'g" \]VfUfm'i bgk "Y'X'i "U'i #' \]gY#\]V'ci h' \]gY](#)

5 WUXYa]WbZcfa Uhcb`

: cf`YggYbh]U`gh XYbh]bZcfa Uhcb`fY`Uh]b[`rc.

- fYei Ygh`Zcf`YI h`bg]cb/
- `Uh`gi Va]gg]cbg`[i]XY`]bYg/
- fYj]Yk `cZa Uf_g/
- I BGK `<YU`h`UbX`GUZY`midc`]WYg/
- YI Ua]bUh]cb`dfcVXi fYg/
- gdYWU`Vc]bg]XYfUh]cb`]b`+ < g]X\$