

EDST5440

5Xj UbWYX`H9GC@'A Yh\cXc`c[m

HYfa &Z&\$&&



7 ci fgY`Cj Yfj]Yk

GHJZZ`7 cbHJW`8 YHJ`g

7cbj Ybcfg

B Ua Y	9a U]`	5j U]`UV]`]m	@cW]h]cb	D\cbY
5bXm; Uc	Li Ygcb["[Uc4 i bgk "YXi "Ui	&! (da `H\i fgXUmg UbX`VmYa U]` Uddc]bha Ybh	; &&A cfj Yb 6fck b 6i]X]b[`Z*%& -\$*) `&*+,

GWXcc``7cbHJW`i`bZcfa U]h]cb

GWXcc``cZ9Xi W]h]cb

5fmgž8Yg][b`UbX`5fWX]hY`W`i fY

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9. `YXi W]h]cb4 i bgk "YXi "Ui

K . \`h]dg.##k k k "Ufmg"i bgk "YXi "Ui #YXi W]h]cb

5W_bck`YX[Ya YbhcZ7ci blfm

7 ci fgY'8YHJ]`g

I b]hg'cZ7fYX]h*'

K cf_`cUX

%) \$\`ci fg]bWf X]b[`WUgg`VčbHUVh\ci fgžfYUX]b[gž`WUgg'dfYdUfUf]cbžUggYgga YbžZc``ck`i d`UWfj]]fYgž
YhW

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

č'h]g`Vči fgY'mci`[U]b`bYk`cf'i dXUH'X'g_]`g]b'h\Y'gdYWU]ghH9GC@Z'Y`X"Mc`i`Yb[U[Y`k]h`UXj UbVWX

H\YgY'UWj]hYg'k]''cVWf]b'U'WUggfcca'W]a UH'hUh]g'gi ddcfhj Y'UbX'ibW]g]j Y'cZU''YUfbYfg"

F Uh]cbU'Y.

5g'Ub[i U[Y'lg'W'bgfUbhmiY] c'j]b[ždfUW]g]b['H9GC @HYUWYfg'UbX'cH\Yf'dfcZYgg]cbU'g'WcgY'm]bj c'j YX
]b'hY'Z'Y'X'bY'Y'X'hc'W'bgfUbhmiFYZYW'i dcb'UbX'fY!Y] U'i UH'hY]f'i bXYfgfUbX]b[g'cZ'Ub[i U[Y'UbX'\ck
VYghhc'hYUW]h'h\Y'W'ei fgY'h'i g'U]a g'hc'W]h]W'`miUbU'mgYž'fY]]gY'UbX'YI h'bx'gh'XYbfg' i bXYfgfUbX]b[
UbX'dfUW]W'cZ'hY'W'efY'UddfcUWYg'UbX'h'W]b]ei Yg'cZH9GC@a YhcXc'c[m'

5ggYgga Ybh

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%'8Yg][b'cZU'YUfb]b['hUg_	(\$i	&*#*\$#&\$&&\$) .\$\$'DA	%ž'(
&'@Yggcb'd`Ub`X]gW gg]cb	* \$i	\$+#\$, #&\$&&\$) .\$\$'DA	&ž' ž'(

5ggYgga Ybh%'8Yg][b'cZU'YUfb]b['hUg_

8i Y'XUHŸ. '&*#*\$#&\$&&\$) .\$\$'DA

8Yg][b'U'YUfb]b['hUg_'huf[YHŸ'hc'U'gdYWŸZŸW[fci d'cZ9G@'YUfbYfg'UbX'dfcj]XY'U'fUŸ]cbU'Y'Zcf'\ck'jh
k ci 'X'Ugg]ghhcgY'YUfbYfg'hc'UWŸi]fY'hŸY'huf[Yh'Ub[i U[Y''

H\]g'Ugg][ba Ybh]g'gi Va]hŸX'hŸfci [\ 'Hi fb]h]b'UbX'ghi XYbŸg'Wb'gYY'Hi fb]h]b'gja]'Uf]mifYdcfŸg"

5XX]h]cbU'XYHŸ]g

@YUfb]b['hUg_'8Yg][b

@Yb[hŸ. 'Bc'a cfY'hŸUb'&\$\$\$'k cfXg'

ŸYbh]Zm'U'gdYWŸZŸWŸUf[Yh[fci d'cZ9G@'YUfbYfg'"GY'YŸU'g\cfhŸYUX]b[ž'ghŸb]b['cfj]Yk]b['hŸi hŸUbX
XYg][b'U'gYf]Yg'cZ&'cf('ghŸdg'fŸ"["'dfY!hUg_ž'dcghŸUg_Łk \]Ÿ\Y'd'hŸY'huf[YHŸ'ghi XYbŸg'hc.

- I bXYfghŸUbX'UbX'hŸ_'UVci hŸhŸY'hŸi hŸUbX
- 9i hŸbX'hŸY]fi bXYfghŸUbX]b['UbX'i gY'cZ9b['g\]b'Ÿa a i b]ŸŸh] YžUi hŸYbh]Wk Umg"

9i d'U]b'\ck'nci f'UWŸ]]mk ci 'X'UWŸ] Y'mYb[U[Y'nci f'Ÿcgyb'YUfbYf[fci d']b'YUfb]b['UbX'i g]b[
9b['g\"

D'YUgY'bchŸ'hŸUhhUg_g\YfY'UfY'Ÿa dcbYbŸg'cZmci f'dYXU[c []ŸŸ'UWŸ]]m'

5ggYgga Ybh&.'@Yggcb'd`Ub`X]gW gg]cb

8i Y'XUHŸ. '\$+#\$, #&\$&&\$) .\$\$'DA

DfYdUfY'U'XYHŸ]YX'Yggcb'd`Ub'UbX'U'Ÿa dfY\Ybg]]'UggYgga YbhczhŸ'UddfcUW]b'fY'UŸ]cb'hc'_'Ym
hŸYcfYŸŸŸ'UbX'dfUWŸŸŸ]ggi Yg'UbX']Ÿg'U][ba Ybhk]h'j Uf]ci g'H9GC@a YhŸcXc'c[]ŸŸ'UddfcUWYg"

H\]g'Ugg][ba Ybh]g'gi Va]hŸX'hŸfci [\ 'Hi fb]h]b'UbX'ghi XYbŸg'Wb'gYY'Hi fb]h]b'gja]'Uf]mifYdcfŸg"

5XX]h]cbU'XYHŸ]g

@Yb[hŸ. 'Bc'a cfY'hŸUb'' \$\$\$'k cfXg'fŸi WŸX]b['fYZfYbWŸgŁ

- DfYdUfY'U'XYHŸ]YX'Yggcb'd`Ub']g]b['U'g\cfhŸ]ghŸb]b[ž'fYUX]b['cfj]Yk]b['hŸi hŸUg'U'gd]b[VcUfX
Zcf'hŸY'hŸUWŸ]b['cZU'Ub[i U[Y'dc]bh]f] cWŸVi 'UfmUbX' [fUa a Uf'cf] cWŸVi 'UfmUbX'U'Z bWŸ]cbU'

UFYUŁ

- Dfcj]XY`Ub`]b!XYdH`fU]cbU`Y`UbX`UggYgga`YbhcZmci`f`Yggcb`d`Ub`k`]h`fYZfYbW`hc`h`Ycf]Yg`i`bXYf`m]b[`h`Y`h`UWX]b[`cZ9b[`]g\`Ug`U`gYWcbX`Ub[`i`U[`Yza`U_]b[`Z`i`gY`cZh`Y`fY`Y]`Ubh`]h`fU]h`fY`Mci`f`Yj`U`i`U]cb`g\`ci`X`]bW`XY`U`X]gW`gg]cb`cZh`Y`gfYb[`h`g`UbX`k`YU`bYggYg`cZh`Y`a`U`h`f]U`g`UbX`h`Ug`g`W`cgYbZ`Ug`k`Y`Ug`h`Y]f`gi`]hUV]`]miZcf`h`Y`Wcbh`i`h]b`k`\]W`mci`k`ci`X`bcfa`U`m`h`UWX"

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98GH) ((\$'58J 5B798 'H9GC@'A 9H<C8C@C; M
I BGK 'G7<CC@'C: '98I 75H€B

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GdYWZ]W7 f]HYfJU	1fŁ ————— 2fŁ Ł				
I bXYfghUbX]b['cZhY'ei Ygh]cb'cf']ggi Y'UbX'h\Y'_YmWŁbWdŁg]bj c'j YX					

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11fł ————— 2fłł

DfYgYbhU]cb`cZfYgdcbgY`UWw`fX]b[`hc`Uddfcd]UHy`UWUXYa]WUbx
]b[i]gh]Ww`bj Ybh]cbg

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GdYWZjW7 f]hYf]U	11 fŁ ————— 2fŁŁ				
<p>DfYgYbHh]cb`cZfYgdcbgY`UWw`fX]b[`hc`Uddfcdf]UH`UWUXYa]WUbx`b[i]gh]Ww`bj Ybh]cbg</p> <ul style="list-style-type: none"> • 7`Uf]m]UbX`Uddfcdf]UH`bYgg`cZgYbhYbW`g]fi W`i fYžj`cWUvi`Ufm`i`gYžgdY`b[ž`UbX`di`bW`i`U]cb • 7`Uf]mž`W`bg]ghYbWwž`UbX`Uddfcdf]UH`bYgg`cZk`f]hYb`YI`dfYgg]cb` • 7`Uf]mž`W`bg]ghYbWwž`UbX`Uddfcdf]UH`bYgg`cZw`bj`Ybh]cbg`Zcf`ei`c]b[ž`dUfUd`fUg]b[ž`Uhf]vi`h]b[`gci`fW`g`cZ]bZcfa`U]cbž`UbX`]gh]b[`fYZYfYbW`g`%o`f]vi`h]ba 		†		%o	

5hYbXUbWV`F`YeI`JfYa`Ybhg

GWcc`cZ9Xi`WUhc`5hYbXUbWV`F`YeI`JfYa`Ybh

H\Y`GWcc`cZ9Xi`WUhc`fG98E`fYeI`JfYg`gh`XYbhg`a`YYhU`a`Jb`ja`i`a`U`hY`bXUbWV`fYeI`JfYa`Ybh`cZ`,\$i`cZU`gW`YXi`YX`WUggYg`f`l`%`Y`W`i`fYg`z`h`h`c`f`J`U`g`z`k`c`f`_`g`l`c`d`g`z`g`Ya`Jb`U`f`g`z`c`f`U`W`e`i`f`g`Y`g`5`h`Y`b`X`U`b`W`V`J`b`d`Y`f`g`c`b`J`g`f`YeI`JfYX`Z`c`f`h`h`c`f`J`U`g`z`g`Ya`Jb`U`f`g`z`U`b`X`k`c`f`_`g`l`c`d`g`k`Y`b`W`e`i`f`g`Y`U`f`Y`X`Y`J`Y`f`Y`X`J`b`Z`U`W`!`h`c`!`Z`U`W`a`c`X`Y`"`#`J`g`h`Y`f`Y`g`d`c`b`g`J`V`J`h`c`Z`g`h`X`Y`b`h`g`h`c`Y`b`g`i`f`Y`h`U`h`h`Y`J`f`U`h`Y`b`X`U`b`W`V`J`g`f`Y`W`e`f`X`Y`X`Z`c`f`h`Y`Z`U`W`V`h`c`Z`U`W`V`Y`J`h`Y`f`V`m`Y`Y`W`f`c`b`J`W`a`Y`U`b`g`c`f`j`J`U`U`b`U`h`Y`b`X`U`b`W`V`f`Y`J`g`h`Y`f`5`h`Y`b`X`U`b`W`V`J`b`c`b`J`b`Y`c`f`V`Y`b`X`Y`X`a`c`X`Y`k`J`V`Y`U`g`g`Y`g`Y`X`h`f`c`i`[`\`X`][`J`h`":`i`f`h`Y`f`J`b`Z`c`f`a`U`h`c`b`W`b`V`Y`Z`c`i`b`X`[YfY`](#)"`

7ci`fgY`GW`YXi`Y`

[J`J`k`W`U`g`g`h`a`Y`h`U`V`Y`](#)

H`j`a`Y`h`U`V`Y`

8U`h`Y`	H`m`d`Y`	7`c`b`h`Y`b`h`
K`Y`Y`_`%`"``\$`A`U`m`!`"``>i`b`Y`	@`Y`W`i`f`Y`	C`j`Y`f`j`J`Y`k` ;`Y`h`j`b`[`h`c`_`b`c`k`i`m`c`i` ?`Y`m`U`g`g`i`a`d`h`c`b`g` H`Y`Y`Y`g`h`c`f`J`W`V`X`Y`j`Y`c`d`a`Y`b`h`c`Z`H`9`G`C`@` a`Y`h`c`X`c`c`[`m`

a UbU[Ya Ybh

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K YY_'. '%%>i `m!`%) >i `m	@yVh fY	HYUWx]b[`k f]h]b[

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- Gd]fcž>UbY"f&\$%`Ł"5YR_XZ_X? Vē`U`]`XZ/d Z_ 7 7 >"9X]bVi f[\.`9X]bVi f[\`l b]j Yfg]mDfYgg"
C b`]bY`UWYgg`h\fc i [\`l B GK ``]VfUfm

F YWca a YbXYX`F Ygci fWg

; YbYfU`VUW_[fci bX`fYUX]b[

- 6Uhg]cbYžF``f%- - (Ł"9 dR^ ^ Rč`C l ZcfX. `C l ZcfX`l b]j Yfg]mDfYgg"
- 6fck bž<"8"f&\$\$\$\$E`` cZ_Tž]vd` WbR_XfRXV >VRc_Z_X R_U`VRTYZ_X``BYk`Mcf_``5XX]gcb`K Yg`Ym
@cb[a Ub`fdd`%(, Ł

8Yj Y`cda Ybh

I gYZ `K YVg]hYg

Gi Va]gg]cb 'cZ5ggYgga YbhiHUg_g

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

≠mci 'YbWci bHYf'U'dfcV'Ya 'k \Yb'UH'Ya dh]b['hc'gi Va]hmc i f'Ugg][ba YbhiH'fci [\ 'Hi fb]h]bž'd'YUgY
HY'Yd\cbY'9I HYfbU'Gi ddcfh'cb'-' ,) " ' ' %cf'Ya U] 'H'Ya 'cb'YI HYfbU'HY'hgi ddcfh4 i bgk "YXi "Ui "'Gi ddcfh
\ci fg'UfY' , .\$Ua '—%\$. \$\$da 'cb'k YY_XUmg'UbX'-. .\$Ua '—) . \$\$da 'cb'k YY_YbXg'f1 *) 'XUmg'U'm'UfL" ≠mci
UfY'i bUV'Y'hc'gi Va]hmc i f'Ugg][ba YbhiXi Y'hc'U'Zi 'hk]H'Hi fb]h]b'mci 'a UmiUdd'm'Z'f'Ub'YI HYbg]cbž'Vi hmc i

5 WUXYa]W< cbYgmiUbX`D`U[]Uf]ga

D`U[]Uf]ga `]g`i g]b[`h`Y`k cfXg`cf`]XYUg`cZch`Yfg`UbX`dfYgYbh]b[`h`Ya `Ug`mci f`ck b`" `#WU`b`hU`_Y`a`Ubm`
Z`fa`g`Z`ca` `XY`]VYfUH`V`X`YU]b[`h`c`UW`Y`X`Y`b`U`m`W`c`d`m]b[`Z`ca` `U`gci f`W`k`]h`ci`h`U`W`_`b`c`k` `Y`X[`Y`a` `Y`b`h`

I BGK `[fci dg`d`U[]Uf]ga `]b`h`c`h`Y`Z`c`ck`]b[`W`U`h`Y[`cf]Yg.

7cdm]b[.`I` g]b[`h`Y`g`U`a` `Y`cf`j` `Y`f`m`g]a`]U`f`k` cfXg`h`c`h`Y`cf]`[]b`U`h`Y`h`cf`]X`Y`U`k`]h`ci`h`U`W`_`b`c`k` `Y`X[]b[`h`Y`
gci f`W`cf`i`g]b[`ei`c`h`U`h`c`b`a`U`f`_`g`" `H`g]b`W`i` `X`Y`g` `W`c`d`m]b[`a` `U`h`f]U`g`z`]X`Y`U`g`cf` `W`c`b`W`d`h`g` `Z`ca` `U` `V`cc`_`z` `U`f`h]W`Y`z`

5 WUXYa]WbZcfa Uh]cb

8i Y'rc'Yj c'j]b['UXj]W'VmB GK ' < YU'hž'gh XYbhg'a i gh'WXYW'Zcf'i dXUHYX']bZcfa Uh]cb'fY[UfX]b['cb']bY
'YUfb]b['Zcf'U''5fngž8Yg][b'UbX'5fW]H'Wfi fY'Wti fgYg'h]g'h'fa 'fj]U'A ccX'Y'cf'Wti fgY']bZcfa Uh]cb
dfcj]XYX"Ł

: cf'YggYbh]U'gh XYbh]bZcfa Uh]cb'fY'Uh]b['rc.