



ARTS2240

9bj]fcba Ybž'Gi ghU]bUV]`]miUbX'8Yj Y`cda Ybh

HYfa `Cby`#`&\$&%

7ci fgY`Cj Yfj]Yk

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7cbj Ybcfg

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GWXcc``cZ<i a Ub]hYg`UbX`@Jb[i U[Yg

@cWJhcb. `GWXcc``C ZWžA cfj Yb`6fck b`6i]X]b[ž@Yj Y`&ž&),

CdYb]b[`<ci fg. A cbXUm! : f]XUmž- Ua `!) da

7ci fgY'8YHJ>`g

7fYX]hDc]bhtg`*`

Gi a a UfmicZ\hY'7ci fgY

<i a Ub'gcW\Yhm\Ug'YI dYf]YbW\X'fYa Uf_UV'Y'W\Ub[Y'Ug'hY'W\bc`c[]WU`]bbcj Uh]cbžYW\bc a]W[fck h'UbX dcdi 'Uh]cb`Uj Y'dfcXi W\X'fUd]X'm\W\Ub[]b['gcW\U'UbX'Ybj]fcba YbhU'UbXgW\UdYg'c] Yf'hY'dUghW ffYbh W\bh f]Yg"Gi W'XYj Y'cda Ybh]g'cZ\Yb'gYYb'U'gmbcbma`cZdfc[fYgg/\ck Yj Yfž'cj Yf'hY'dUghZk`XYW\XYg]h\Ug'VYYb]bW\YUg]b['mfYW\ b]gYX'h.Uhgi W'fUd]X'W\Ub[Y'\Ug'dfcXi W\X'Ub'i bYj Yb'gcW\U']Yc[fUd\m-a Uf[]bU'g]b['g][b]Z\W\bhdc di 'Uh]cbg-'k \]Y'U'gc']bhYbg] Y'miXY[fUX]b['UbX'dc`i]b['X]ZYfYbh Ybj]fcba Ybhg"K Y'k]`X]gW gg\ck 'hY']XYU'cZgi ghU]bUV'Y'XYj Y'cda Ybh\Ug'Ya Yf[YX'Ug'U'fYgdcbgY'hc h'g]W\cbi bXfi a`-Ub'YZc f'h'c'fYX]fYW\YW\bc a]W[fck h'hc'dfcXi W\X'a cY'gcW\U'm`ghUbX Ybj]fcba YbhU'miVYb]b[b'ci h\W'a Yg" H\Y'dU\h'hc'U'gi ghU]bUV'Y'Z hi fYž\ck Yj Yfž'g]bchghfU] \hž'fk UfXžUg Ybj]fcba YbhU'žgcW\U'UbX'YW\bc a]W]ggi Yg'UfY'i 'h'a UH'mg]h' UH'X']b'W\cbhYgh'X'dc`]h]W\ 'fYU'a g" `b'h'g] W\ci fgYž'mci 'k]`gh X'm\ck '\i a Ub!Ybj]fcba Ybh]bh'fW\bbYW]cbgž'UW'fcgg'X]ZYfYbhgW\Yg'UbX']b'X]ZYfYbh W\cbh' h'gž'W'a Y'hc[Y'hYf'hc'XYa cbghfU'h'\ck Ybj]fcba YbhU']ggi Yg'UfY'g]h' UH'X']bž'UbX'g\UdYX'Vm dc`]h]W\ 'UbX'YW\bc a]W\cbh' h'g' H\]g'k]`]bWi XY Yb[U[]b['k]h'U'bi a VY'fcZ_Ymigi ghU]bUV']]miXYVU'hYg Ug'k Y'U'g'hY']b!XYd'h'gh XmicZX]ZYfYbhYI Ua d'Yg'Z'ca 'Ufci bX'hY'k c'f'X"

7ci fgY '@YUfb]b['Ci h\W'a Yg

% 9I d'U]b\ck 'Ybj]fcba YbhU']ggi Yg'UfY'g\UdYX'Vch'a UH'f]U'miUbX'X]gW fg] Y'm &" =>XYbh]Zmh'Y'fUb[Y'cZYbj]fcba YbhU'W\U'Yb[Yg'ZUW]b['XYj Y'cd]b['W\ci bh]Yg ' " 5dd'mW\cbW\dh U'UbX'UbU'm]WU' _bck 'YX[Y'cZYbj]fcba YbhU']ggi Yg'UbX'XYj Y'cda Ybh'hc' WUgY gh X]Yg (" 9j U'i UH'X]ZYfYbh dYfgdYW] Yg'cb'Ybj]fcba YbhU'X'XYj Y'cda Ybh

HYUW\]b['GhfU'hY[]Yg'

H\]g'W\ci fgY'k]`i gY'U'V'YbXYX'YUfb]b['UddfcUW\ž'k]h']bghfi W]cb'cW\W ff]b[]b'hY'WUggfcc a 'fYW\h' fY'UbX h'hc]U'gž'U]XYX'k]h'cb']bY'Yb[U[Ya Ybh'h'fci ['\Ugg][ba Ybhgž'X]gW gg]cbg'UbX'UW]]h'Yg" H\Y'cb']bY Ybj]fcba Ybh'f'h'fci ['\A ccX'Y'g]g'U'bU'h'fU'YI hYbg]cb'cZ'fUX]h'cbU'WUggfcc a 'YUfb]b["'H\Y'h'hc]U'g'k]` \Uj Y'U'gh'fcb['ZcW'g'cb'[fci d'UW]]h'Ygž'dfcj]X]b['Ub']bh'fUW] Y'Ybj]fcba Ybh'Z'f'gh' XYbhg'hc'X]gW gg]XYUg'UbX']ggi Yg'k]h' h'Y]f'dYYfg"

5ggYgga Ybh

5ggYgga YbhHUg_g

5ggYgga YbhHUg_	8i Y'8UH	Gh XYbh@YUfb]b[Ci hWta Yg'5ggYggYX
K f]h]b['5Xj cWUWriD]YWW') # \$' #&\$&%\$(. \$\$'DA	%ž('
@]hYfUhi fY'F Yj]Yk'	\$%#\$(#&\$&%\$(. \$\$'DA	&ž('
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GHfhXUH.

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GhUfhXUHy. 'Bch5dd`]WV`Y

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

8YhU]`g.

5 hYbXUbW F Yei]fYa Ybhg

5 hYbXUbW cZ@YWhi fYg UbX Hi hcf]Ug]g'a UbXUhcfm]b h]g Wci fgYzUg]bhYfUWh]cbg]b WUgg UfY W]h]WU Zcf fYU]g]b['U cZ hY Wci fgYg]YUfb]b['ci hWca Yg" I bYI W gYX UVgYbW Zfca 'a cfY h.Ub &\$i 'cZ YWhi fYg UbX hi hcf]Ug'k] fYgi 'h]b hY Uk UFX cZU'Z] ' fUXY" 5 hYbXUbW k] VY hU_Yb Xi f]b['@YWhi fYg UbX Hi hcf]Ug"

7 ci fgY GWYXi `Y

[J Jyk WUgg ha YhUVY](#)

Hja YhUVY`

8 UH	HmdY	7 cbhYbh
K YY_% %) : YVfi Ufm! %- : YVfi Ufm %o YU`6 %o	@YWhi fY %o	@afW SVV[f[a` S^ [Xad Sf[a` t [Ugv[Y WSUZ i Ww] ei d\SV[Yel US` TWXag` V a` fZWUagdeWe ? aaVW i Wte[fWz bhfcXi W]cb H\]g'@YWhi fY'k Y'k]'' [c'h'fci [\ h'Y'Wci fg'g cV'YW]j YgZ Uch] U]h]g]g'Yb]g'cZ hY`_YmVcbWdhg hUkh Y'k]'' YbWci bhYf'h'fci [\ h'Y'gYa YghYf" fiU'gc]bWi XYg Ub'cb]bY Wca dcbYbhihUhg]i XYbhg bYYX hc Wca d'Yh"
K YY_&.&&: YVfi Ufm! '* : YVfi Ufm	@YWhi fY	Dc`]h]WU`9Wc`c [m H\]g'@YWhi fY'k]'' YI d'cfY'h'Y'VUg]Wd

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		dUfhg'cZĤY'XYj Y'cd]b['k cfX"'#k]''W]h]WU'm YI Ua]bY'X]ZYfYbhĤYgYgžfUb[]b['Zfca 'ĤY Ybj]fcba YbĤU'XYĤfa]b]gh]WUddfcUWX Yg'Ĥc'dc'']h]WU' YVĤbca mZUa Yk cf_g"
K YY_) : % 'A UfW ! % A UfW	@YWh fY	ĤhYfbU]cbU' HfUXY'UbX'ĤY'9bj]fcba Ybh H\]g'@YWh fY YI d'cfYg'ĤY'XnbUa]Wg'cZk cfX'fUXY UbX['cVU]gU]cb'UbX'\ck]h\Ug'i bYj Yb]a dUWg Ufci bX'ĤY'k cfX"
K YY_*. '&'A UfW ! '& A UfW	F YUX]b[F YUX]b['k YY_!'bc''YWh fYg'cf'h Ĥcf]Ug
K YY_+. '&'A UfW ! '& 5df]	@YWh fY	Dc']h]WU'9VĤ'c[]Yg'cZ9bYf[m I]g]b['U'WUgY'gh XmiUddfcUWXžĤ]g'@YWh fY YI Ua]bYg'X]ZYfYbhYbYf[mUbX'XYj Y'cda Ybh]ggi Yg Ufci bX'ĤY'k cfX. \ck 'ĤY'dfcXI W]cbž hfUbgdcfĤU]cb'UbX'i gY'cZYbYf[mUfY'']b_YX'Ĥc'U fUb[Y'cZX]ZYfYbhYbj]fcba YbĤU'UbX'gcWU']b↑gh]Wg" H\]g'k]'']bWi XY'k cf_]b['Ĥfci ['\cb']bY UW]j]hYg"
K YY_ ; .) '5df]'! - '5df]	@YWh fY	Dc']h]WU'9VĤ'c[]Yg'cZK UĤf I]g]b['U'WUgY'gh XmiUddfcUWXžĤ]g'@YWh % YI Ua]bYg'X]ZYfYbhk UĤf'X]Ya a Ug'Ufci bX'ĤY k cfX. \ck 'ĤY'i gYžYI d'c]U]cbžVĤa a cX]Z]WU]cb

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

H\YfY`jg`bc`hI`hcc_`zcf`h]g`gi`V`Y`W`7`ci`fgY`fYUX]b[`g`UfY`U`W`W`gg]V`Y`j`]U`A`ccX`Y`"

F YWca a YbXYX`F Ygci fWg

F YWca a YbXYX`>ci fbU`g

3` `gS^DWh[W` aX7` h[ca` _ W f S` V DWeagdJWé

3` f[baVW

3` _ T[a

3` dW

5` Sb[fS`fe_`†`@SfgdW`EaU[S`fe_`

5` a` eWthSf[a` 4` [a`aYk

5` g`fgdS`^3` fZ`daba`aYk

7` Ua`aYk`S` V`EaU[Wfk

7` Ua` a` _ [U`9`WáYdSbZk

7` WdYk`Ba`fUk

7` WdYk`Xad`EgefS[`ST`W6`WhWab_`W`f

7` WdYk`DWeWsdJZ`S` V`EaU[S`^E`U[W`UW

7` h[ca` _ W f S`^5`a` eWthSf[a`

7` h[ca` _ W f l`6`WhWab_`W`f S` V`EgefS[`ST`[f`k

7` h[ca` _ W f S` V` :` [efack

7` h[ca` _ W f S` V`B`S` ` [Y`6` ,`EaU[Wfk`S` V`EbSUW

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7` h[ca` _ W f S`^:` g_`S` [f[Wé

7` h[ca` _ W f S`^Ba`fUk`S` V`9`ahWd`S` UW

7` h[ca` _ W f S`^HS`gWé

7` j`fdSur[hW;`VgefQWé`S` V`EaU[Wfk

9` WáX`d`g_`

9` WáYdSbZ[US`^D`WeWsdJZ

9` a`TS`^7` h[ca` _ W f S`^5`ZS` YW

9` a`TS`^7` h[ca` _ W f S`^Ba`f[Ue

<agd`S`^a`X6`WhWab_`W`f`E`fgV[Wé

<agd`S`^a`XBa`f[Ue`US`^7`Ua`aYk

>S` V`6`W`d`S`V`S`f[a` S` V`6`WhWab_`W`f

>S` V`GeW`Ba`fUk

Babg`Sf[a` E`b`SUWS` V`B`^SUW

B`d`a`Y`d`Wéé` [`6`WhWab_`W`f`E`fgV[Wé

B`d`a`Y`d`Wéé` [` :` g_`S` 9`WáYdSbZk

E` [`YS`badW`<agd`S`^a`XF`d`b[US`^9`WáYdSbZk

E`a`U`[Wfk`S` V`@`SfgdS`^D`WeagdJWé

E`gefS[`ST`[f`k`E`U[W`UW

F`Z`[d`V`I`ad`V`C`g`S`d`W`k

F`d`S`e`S`U`f[a`e`a`X`f`Z`W;`e`f`[f`g`f`W`a`X`4`d`f`[e`Z`9`WáYdSbZ`Wé

I`ad`V`6`WhWab_`W`f

I`S`f`W`d`3`f`W`d`S`f`[h`Wé

K YVg]hYg

I b]hX'BUhcbg'9bj]fcba YbhDfc[fUa a Y'fl B9DŁ-k k k "i bYd"cf[
I b]hX'BUhcbg'8Yj Y'cda YbhDfc[fUa a Y'fl B8DŁ-k k k "i bXd"cf[
#hYfbUhcbU'7YbhfY'Zcf'HFUXY'UbX'Gi ghU]bUV'Y'8Yj Y'cda Ybhf#7HG8Ł-k k k "]WgX"cf[
: ccX'UbX'5[f]W'hi fY'C f[Ub]nUhcb'cZhY'I B'fi 5CŁ-k k k "ZJc"cf[
K cfX'HFUXY'C f[Ub]nUhcb'fK HC Ł-k k k "k h"bh
#hYfbUhcbU'1 b]cb'Zcf'hY'7cbgYfj Uhcb'cZBUh fY'f# 7BŁ-k k k "ji Wb"cf[
H\]fX'K cfX'BYk cf_'fHK BŁ!\hd.## k k "rk bg]XY"cf["g[#
; YbYh]WF Ygci fW'g'5W]cb' #hYfbUhcbU'fi F 5-BŁ-k k k "[fU]b"cf[

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7ci fgYg'UFY'dYf]cX]WU`mfYj]Yk YX'UbX'gh XYbfg'ZYXVUW_]g'i gYX'hc']a d\$ Y'hYa ", YXVUW_]h

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 YbhiH'fci [\ 'Hi fb]h]bž'd'YUgY
HY'Yd\cbY'9I HYfbU'Gi ddcfhcb'-',) " ' ' %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'fl *) 'XUmg'U'm'YUfl" Ʒmci
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 UmUdd'm'Zcf'Ub'YI HYbg]cbž'Vi hmc i
a i ghfYHU]b'mci f'h]W_Yhbi a VYf'Z'ca '9I HYfbU'Gi ddcfhfU'cb['k]H'UbmcH'Yf'fY'Yj UbhXcW a YbHg'k'hc
]bWi XY'Ug'Yj]XYbVW'hc'gi ddcfhmc i f'YI HYbg]cb'Udd'jW]h]cb" Ʒmci 'Ya U]'9I HYfbU'Gi ddcfhmc i 'k]
Ui 'ca UH]WU'm'fYW]j Y'U'h]W_Yhbi a VYfž'Vi h]Zmci 'HY'Yd\cbY'mci 'k]'b'YX'hc'gdYW]Z]WU'mUg_ 'Zcf'cbY"
Hi fb]h]b'U'gc'dfcj]XYg'i dXUH'g'cb'H'Y]f'gmgh'Ya 'ghU'g'cb'Hk]HYf"

; YbYfU'mž'UggYgga YbhiHUg_g'a i ghVY'gi Va]HYX'Y'YW'fcb]WU'mj]U'Y]H'Yf'Hi fb]h]b'cf'U'A ccX'Y
Ugg][ba YbH' 'b]bg]UbVW'g'k \YfY'H'lg]g'bc]hdccg]V'Yž]hk]'VY'ghU'YX'cb'mci f'Wci fgY'g'A ccX'Y'g]H'k]H
U'HYfbUH] Y'gi Va]gg]cb'XYHU]g"

: cf]bZ'fa UH]cb'cb'\ck 'hc'gi Va]hUgg][ba YbHg'cb]bYj]U'A ccX'Y. \hhdg.#gh XYbH'i bgk "YXi "Ui #ck!
gi Va]hUgg][ba YbH'a ccX'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]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']hYg'Ug'U'gh XYbhUhl BGK
-

5 WUXYa]W**ϕ**Zcfa Uh]cb

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