93 3 14

$\sigma_a(V) = \{\Lambda : \dim(\Lambda \cap V_{n-k+i-a_i}) \geq i\}$ and
$\sigma_b(V') = \{\Lambda : \dim(\Lambda \cap V'_{n-k+i-b_i}) \geq i\}$
be general Schubert cycles. Then for each i and any $\Lambda \in \sigma_a(V) \cap \sigma_b(V')$,

$$\dim(\Lambda \cap V_{n-k+i-a_i}) \geq i,$$
$$\dim(\Lambda \cap V'_{n-k+(k-i+1)-b_{k-i+1}}) \geq k-i+1$$
$$\Rightarrow \Lambda \cap V_{n-k+i-a_i} \cap V'_{n-i+1-b_{k-i+1}} \neq (0).$$

Recall that. $\dim(V+W) = \dim V + \dim W - \dim(V \cap W)$.

$$\Rightarrow \dim(V \cap W) = \dim V + \dim W - \dim(V+W).$$

$$\dim(\Lambda \cap V_{n-k+i-a_i} \cap V'_{n-i+1-b_{k-i+1}}) = \dim\{(\Lambda \cap V_{n-k+i-a_i}) \cap (\Lambda \cap V'_{n-i+1-b_{k-i+1}})\}$$
$$= \dim(\Lambda \cap V_{n-k+i-a_i}) + \dim(\Lambda \cap V'_{n-i+1-b_{k-i+1}}) - \dim\{(\Lambda \cap V_{n-k+i-a_i}) + (\Lambda \cap V'_{n-i+1-b_{k-i+1}})\}$$
$$\geq \dim(\Lambda \cap V_{n-k+i-a_i}) + k-i+1 - \dim\Lambda \geq i + k-i+1-\dim\Lambda$$
$$= k+1-k = 1$$
$$\Rightarrow \Lambda \cap V_{n-k+i-a_i} \cap V'_{n-i+1-b_{k-i+1}} \neq (0).$$

But now if $a_i + b_{k-i+1} > n-k$, we have

$$(n-k+i-a_i) + (n-i+1-b_{k-i+1}) = 2n-k+1-(a_i+b_{k-i+1})$$
$$\leq n,$$

and so we can choose our flags V and V' such that $V_{n-k+i-a_i}$ and $V'_{n-i+1-b_{k-i+1}}$ intersect only at the origin.

$$n-k+i-a_i+n-i+1-b_{k-i+1} = 2n-k-1+2-(a_i+b_{k-i+1})$$
$$\leq 2n-k-1+2-(n-k+1) = n$$