Define $m : (a,b) \to \mathbb{R}$ by

$$m(x) = \begin{cases} 0 & \text{if } x \in K \\ 1/q_n'(x) & \text{if } x \in (a_n,b_n) \end{cases}$$

Then m is continuous and admissible and the flow ψ coincides with the flow constructe from m in Theorem 3.17. Hence δ_m is the generator of the group $(S(t))_{t\in\mathbb{R}}$ given by $S(t)f = f\circ\psi_t = f\circ\beta^{-1}\circ\phi_t\circ\beta$ $= VT(t)V^{-1}f$, where V is the isomorphism on $C_o(a,b)$ given by $Vf = f\circ\beta$. Consequently, $\delta = V^{-1}\delta_m V$.

□

Now we are able to describe arbitrary generators of positive groups on $C_o(a,b)$.

<u>Theorem</u> 3.25. Let $-\infty \leq a < b \leq \infty$. An operator A generates a positive group on $C_o(a,b)$ if and only if there exist

- a lattice isomorphism V on $C_o(a,b)$,
- an admissible function m on (a,b),
- a bounded continuous function $h : (a,b) \to \mathbb{R}$ such that

$$A = V^{-1}\delta_m V + h . \tag{3.24}$$

<u>Proof</u>. Let A be the generator of a positive group on $C_o(a,b)$. By Theorem 3.14 there exist a continuous bounded function $p : (a,b) \to \mathbb{R}$ such that $\inf_{x\in(a,b)} p(x) > 0$ and $h \in C^b(a,b)$ and the generator δ of an automorphism group such that $A = M\delta M^{-1} + h$ where $M \in L(C_o(a,b))$ is given by $Mf = p\cdot f$. By Theorem 3.24 there exist an admissible continuous function $m : (a,b) \to \mathbb{R}$ and a lattice isomorphism $U \in L(C_o(a,b))$ such that $\delta = U\delta_m U^{-1}$. Setting $V = MU$ we obtain $A = V\delta_m V^{-1} + h$.

□

Finally we consider compact intervals. Let $-\infty \leq a < b \leq \infty$ and ϕ be a continuous flow on $[a,b]$. Then it is easy to see that $\phi(a,t) = a$ and $\phi(b,t) = b$ for all $t \in \mathbb{R}$. So the restriction ϕ_o of ϕ to (a,b) is a continuous flow on (a,b).
Conversely, if ϕ_o is a continuous flow on (a,b) the extension ϕ_o to $\phi : \mathbb{R} \times [a,b] \to [a,b]$ by setting $\phi(t,a) = a$; $\phi(t,b) = b$ for all $t \in \mathbb{R}$ defines a continuous flow on $[a,b]$. This consideration allows us to extend easily the preceding results to the space $C[a,b]$. Let $m : (a,b) \to \mathbb{R}$ be a continuous function. We define the operator $\tilde{\delta}_m$ on $C[a,b]$ by $\tilde{\delta}_m f = g$ such that